Back to the *Garten*: Inquiry-Based Learning in an Outdoor Kindergarten Classroom

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Abstract

Informed by alternative learning theories that apply a constructivist approach to education, this research study explores one form of experiential, hands on education; inquiry-based learning. Grounded in the new sociology of childhood, which values the voices of young children, this study examines how inquiry-based learning is experienced by kindergarten students in an outdoor classroom in Fonthill, Ontario. This research expands on current relevant literature to understand kindergarteners' experiences in an outdoor inquiry-based classroom through their first hand reports, accompanied by observations made by their teachers. Based on a constructivist framework, this study employs a phenomographic methodology consisting of semi-structured, participant guided interviews, and inductive data analysis involving a cross-comparison of the transcripts across kindergartener and teacher participants. Three major themes emerged from the data in this study: (a) student-led experiences in the outdoor classroom; (b) lessons experienced in the outdoor classroom; and (c) boundaries to learning in the outdoor classroom. Responses from participants in this study raise questions for future research regarding the use of informal learning in the public education system specifically in regards to the roles of teachers, the structures of learning spaces, and the experiences of diverse populations. This study supports the notion that outdoor, inquiry-based learning can be one way to engage students in their own knowledge construction, demonstrating a connection between this model and the values of social justice education.

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As a young person raised in an ever-developing, suburban area of Southern Ontario, I spent most of my childhood in highly structured settings. I had little exposure to nature-based experiences within my formal education, except for the rare class field trip or visit to a museum or a nature conservation area. After many years in the formal education system, I felt a lack of personal connection to my education in general, and to the people at school or in my community as well as to the environment around me. This lack of connection left me with a strong desire to understand more about the ways that young children can become personally engaged in their learning and in their communities.

While spending time this past year involving myself in community ecological initiatives, including communal food growing and local environmental restoration projects, I was introduced to the concept of child-centered gardens as potential spaces to enhance children's learning experiences. I was exposed to a schoolyard greening initiative in the Niagara Region, and the work being done to construct an outdoor classroom at Glynn A. Green Public School in Fonthill, Ontario, through a school, community, and Brock University initiative. This outdoor classroom specifically serves the inquiry-based kindergarten classrooms which approach learning based on the students' queries (inquiry-based learning will be explicated in full in the literature review).

The purpose of this study was to explore kindergarteners' experiences in an outdoor inquiry-based classroom by investigating the following questions: (a) what do students report about their experiences in an outdoor, inquiry-based classroom setting? and (b) what do teachers report about their observations of children's experiences in an outdoor, inquiry-based classroom setting?

My previous training in child and youth studies was very much in keeping with the new sociology of childhood, which sees children as social actors who are capable of decision-making and common sense (Mason & Hood, 2011). This new sociology reinforces that the voices of adults should not be privileged over those of young people, particularly in regards to decisions that ultimately affect their lives (Matthews, 2007). My adamant belief is that children are far too often excluded from conversations regarding issues that directly concern their lives, and that it is not possible to gain an understanding of what is best for children, or for anyone for that matter, without talking directly to the subjects of inquiry. This study was informed by my positionality and life experiences, which incline me toward a critical view of formal public education and compel me to query the ways in which public schools (do and do not) engage children in the larger social, environmental, cultural, and learning environments in suburban areas of Ontario. This project was inspired by a utopian vision in which children are able to direct their own learning and act as advocates, agents, and authorities of their own lives.

With this in mind, in the following sections I will explore the constructivist framework which, in line with my own theoretical positioning, approaches learning as a process in which students actively engage with their environment in an effort to create meaning based on their experiences of the world around them (Fenwick, 2001; Galt, Parr, Kim, Beckett, Lickter, & Ballard, 2013; Gordon, 2009). I will then review the current literature pertaining to outdoor and experiential education. I will introduce the study's phenomenographic methodology, a qualitative, empirically-based research methodology that examines socially transformative phenomena and aims to describe people's perceptions and experiences of phenomena within the social world (Akerlind, 2012; Ashworth & Lucas, 2000). Next, I will provide details about the study participants, data collection methods, and data analysis. I will then present the study

findings using direct quotations from the participants in order to highlight their accounts. Finally, I will further illuminate these findings though a discussion relating the current study to other contemporary literature relevant to outdoor inquiry-based learning. This discussion will highlight the scholarly significance of the current study, present the limitations of the study, and suggest opportunities for future research.

Chapter 1

Literature Review and Theoretical Framework

In this chapter I will provide an overview of literature relevant to the purpose of my study. I will present the philosophical and theoretical foundations of this research and draw on themes and outcomes from previous research studies, building a case for the present study. This chapter will include sections on: (a) traditional education; (b) constructivism and alternative pedagogy; (c) experience and education, including experiential education and social justice; and (d) inquiry-based learning in the outdoor classroom, including curricular benefits, inquiry-based learning in kindergarten, and outdoor learning. In keeping with the purpose of this study, to explore kindergarteners' experiences in an outdoor, inquiry-based classroom, this chapter will begin by discussing the foundations of the traditional school system as well as providing a critique of some of the current shortfalls of formalized education. This chapter will then lead into a discussion of the use of alternative pedagogies – specifically outdoor, inquiry-based learning.

Traditional Education

The formal Western education system, grounded in cognitive and behaviourist learning theories (Fenwick, 2001; Hein, 1995; Roberts, 2009), advocates that knowledge acquisition is an incremental process which occurs as people are provided with information that they assimilate into their already existing schemas (Hein, 1995; Roberts, 2009). Based on this assumption, the traditional system relies on the rote transmission of information from a teacher to her students in order to achieve the predetermined goals outlined in the school curriculum (Hein, 1995; Roberts, 2009). By relying on standardized curriculum and methods of evaluation, formal education today continues to view the reiteration of particular facts and experiences as the ultimate indication of successful learning (Gordon, 2009; Pyle & DeLuca, 2013).

This system, however, has been widely critiqued by educational thinkers and policy makers over the years (Desmond, Grieshop, & Subramaniam, 2002; Dewey, 1938; Freire, 1970; Montessori, 1967; Roberts, 2009; Subramaniam, 2002). Notably, cognitive and behaviourist approaches to education were famously critiqued in the work of John Dewey (1938) who contended that in traditional schools, pupils must be docile and obedient in order to obtain the knowledge that is being handed down to them. According to Dewey, not only are traditional teaching methods routinized to the point where they create passive learners, Dewey also described traditional teaching methods as extremely decontextualized, making the knowledge obtained in schools irrelevant to students' lives, resulting in disinterest and disengagement from students' learning. Accordingly, Dewey (1938) explained that by institutionalizing education and putting students into schools to learn, the information that is taught to children is fragmented from their real-life experiences, and is rendered unavailable "under the actual conditions of life" (p. 48).

Noting that children's experiences in the context of traditional schooling are largely uninspiring and fail to actively engage students in their education, Dewey (1938) questioned:

> How many students, for example, were rendered callous to ideas, and how many lost the impetus to learn because of the way in which learning was experienced by them? How many acquired specific skills by means of automatic drill so that their power of judgement and capacity to act intelligently in new situations was limited? How many came to associate the learning process with ennui and boredom? How many found what they did learn so foreign to the situations of life outside the school as to give them no power or control over the latter? (p. 27)

Following Dewey's critique, other educational scholars have noted that there is a disconnection between what is being taught in schools and students' lives (Giroux, 2014; Scribner & Cole, 1973; Subramaniam, 2002). In Scribner and Cole's (1973) discussion of traditional teaching strategies and curriculum initiatives, the authors similarly referred to traditional education as *out of context* from students' real lives. They demonstrated the educational substance that can be lost within the traditional school system and stressed that students should learn by doing, rather than learning primarily through the transmission of ideas through language. As stated in their conversation surrounding learning contexts, "it is self-evident that when linguistic forms carry the full burden of communication, the amount of information available to the learner is restricted" (Scribner & Cole, 1973, p.556).

This analysis of learning contexts was echoed in the work of Cobern (1996) who described decontextualized learning as cognitive apartheid. In his explorations of worldview theory, Cobern noted that students interpret and understand what is taught to them based on how they perceive the world. He asserted that any knowledge that is not significant to a student's own worldview is retained only for short-term retrieval for events such as tests, and that such information is ultimately discounted and discarded once it is no longer relevant (Cobern, 1996). Similarly, Galt et al. (2013) assert that educational information is more meaningful and less easily forgotten if presented in a more interactive manner.

Constructivism and Alternative Pedagogy

Certain shortcomings and critiques of the traditional educational system have led to alternative learning theories that apply a constructivist approach to education. Constructivism approaches learning as a process in which students engage with their school environment in an effort to create meaning based on their experiences of the world around them (Fenwick, 2001;

Galt et al., 2013; Gordon, 2009). This view is in contrast with the behaviourist traditions of the public education system which see knowledge as absolute, and handed down to a student from his or her teacher. In seeing learning as a social process in which a learner integrates new information into their already existing understandings of the world, constructivism highlights the way that knowledge is socially and culturally embedded, and promotes hands-on, student-led learning as a way to engage learners with their experiences (Roberts, 2009). Constructivism in education focuses on collaborative learning and student-teacher interactions that lead to partnerships in which students are seen as possessing knowledge, thus dismantling "the artificial rules and codes that make up classroom reality" (Duncan-Andrade & Morrell, 2008, p. 23).

More recent discussions surrounding educational policy and initiatives have been increasingly informed by constructivist theories (Roberts, 2009; Seaman, 2008; Warren, Roberts, Breunig & Alvaraz, 2014). Constructivism puts an emphasis on the importance of the connection between theory and practice, better known as educational praxis (Breunig, 2005), in an individual's process of constructing knowledge. Constructivists note that praxis can only be achieved through the combination of purposeful reflection and action; hence they turn to the educational philosophy known as pragmatism. A defining feature of pragmatism is the notion that educational praxis involves the active process of critical thinking, exchanging ideas and articulating problems (Gordon, 2009). As described by Gordon (2009) "genuine knowledge comes neither by thinking about something abstractly nor by acting uncritically, but rather by integrating thinking and doing, by getting the mind to reflect on the act" (p. 49).

According to pragmatism, only through the process of self-reflection and engaged learning will individuals become equipped to develop an understanding and awareness of themselves, of the world around them, and of their interactions within the world (Galt et al.,

2013; Gordon, 2009). Pragmatism, then, is "deeply concerned with changing current educational practice to foster active learning and genuine understanding" (Gordon, 2009, p.55) in order for individuals to construct their own meaning. Present day critical educational theorists thus advocate for constructivist approaches to schooling as a way to encourage student engagement in their learning experiences through interaction with their environment (Galt et al., 2013; Gordon, 2009; Roberts, 2009; Subramaniam, 2002).

Experience and Education

Experiential education, as defined by the Association of Experiential Education, is *"*a philosophy that informs many methodologies in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities" (Association for Experiential Education, 2014). Opportunities for educational praxis exist through various sites of experiential education, including service-learning, adventure education, and environmental education, to name a few (Breunig, 2013; Fenwick, 2001; Gordon, 2009; Roberts, 2009). Often, experiential education initiatives are centered around the experiential learning cycle, as defined by Kolb (1984), which consists of four segments: "(a) active student involvement in a meaningful and challenging experience, (b) reflection upon the experience individually and in a group, (c) the development of new knowledge about the world, and (d) application of this knowledge to a new situation" (p. 36-37). These segments are illustrated in the experiential learning cycle in Figure 1 below. With a focus on hands-on learning, and in an effort to connect children to natural life processes, many experiential learning methods extend their practices beyond the confines of the four walls of the traditional classroom (Blaire, 2009; Dyment, 2005; Subramaniam, 2002), employing this experiential learning cycle across

alternative sites of learning such as on a wilderness trip, or in a schoolyard (Fenwick, 2001; Roberts, 2009).

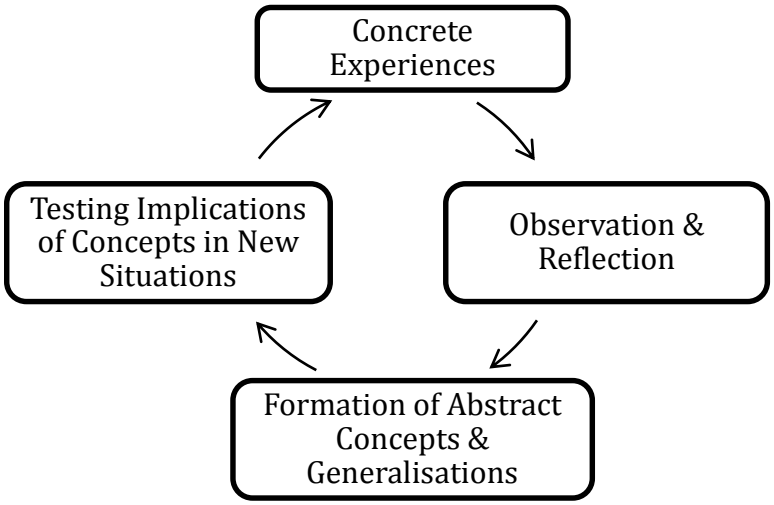


Figure 1. The experiential learning cycle (Kolb, 1984).

Some educators who advocate for a more critical, constructivist pedagogy, however, critique some of the current experiential methods of teaching (Bell, 1993; Fenwick, 2001; Roberts, 2009), claiming that many experiential educators assume an over simplified, taken-for-granted understanding of what is involved in the experiential learning cycle (Roberts, 2009). Critics note the difficulties of emancipating learning from the dominant, historically rooted public education system, which remains enormously influenced by its foundations in standardization, efficiency, and control (Roberts, 2009; Savery; 2006). In this regard, even lessons that employ experiential methods of education are constructed in such a way that they still conform to meeting the criteria of the standardized formal education (Gordon, 2009; Warren, 2005). These criteria are often based on a dominant theoretical perspective, which "rests on particular assumptions about what knowledge is, how it is constructed, how to view knowers, and how knowers are related to their contexts" (Fenwick, 2001, p. 14).

Roberts (2009), in his discussion on the historical and theoretical development of the field, stated "experiential education is not, in fact, 'neutral' nor more resistant than any other pedagogy to the influence of the cultural milieu around it" (p. 26). Similarly, Rose and Paisley (2012) assert the continuous need to "trouble educational practices, including those that take place in experiential or outdoor settings," as even these spaces "remain sites of power, privilege, and oppression" (p. 142). The influence of traditional pedagogies can create a disconnection between experiential theory and classroom practice; for instance, some educators who advocate for reflective, experiential education in theory may in fact employ teaching strategies that are teacher-centered or that do not allow adequate time for student reflection (Breunig, 2005). In this way, some educators ignore the transformative potential of experiential education by disregarding the vital connection between educational initiatives and social, political, and historical contexts (Roberts, 2009).

Indeed, every experience is shaped and confounded by one's social, political, and historical space (Gordon, 2009; Savery, 2006). However, whereas cognitive and behavioural approaches to education problematize individual interpretations of an experience, claiming that social forces in fact construct what individuals come to know as reality, constructivist thought puts a focus on the way that individuals create their own realities through their interactions with their environments and adapt their understandings of the world accordingly (Gordon, 2009; Roberts, 2009). This is not to say that these realities are not confounded by implicit values based on a particular perspective, however. While students' learning experiences will never be removed from social, cultural, and political contexts, it is necessary to acknowledge and address these experiences in order to engage students in their learning. While acknowledging the prevailing influence of power hierarchies on social systems and situations, it is necessary to

maintain a vision of the potential for agency and change (Rose & Paisley, 2012). As Marton (1981) explains in his discussion of constructivism in education, we must remember that individuals will interpret and respond to social influence in different ways from one another, further highlighting the need to acknowledge individuals' perceptions of their own experiences. Rose and Paisley (2012) contend that in acknowledging their own subjectivities and positions of power, teachers can also reflect on the different meanings being conveyed to students in order to better understand whose voices are being heard, whose voices are absent, and why, pointing to larger social issues of equity, justice, and agency.

In this way, the experiential learning cycle (as demonstrated earlier), is not enough to achieve the pragmatic goals of constructivist thought which emphasize the construction of meaning through engaged interactions with one's learning experiences. As Fenwick (2001) suggests, if experiential education is going to be used as a progressive, liberatory practice, it is necessary for students to actively question "the nature of the intersection between individual(s), situation, social relationships, and knowing," as well as for educators to question what kind of role they should take in student-centered learning practices (p. 13).

Experiential education and social justice

Experiential education must, therefore, be more than merely the act of employing a teaching method that makes use of hands-on learning in its practice if it aims to embrace the transformative potential of alternative pedagogies (Breunig, 2005; 2013; Fenwick, 2001; Roberts, 2009). Many alternative scholars thus support a more critical, holistic approach to experiential education, wherein the term is considered more as a philosophy than a practice (Breunig, 2013; Knapp, 1992; Warren, 2005), and learning is approached from a social justice lens. Social justice education works to address oppressions based on social identity (Rose &

Paisley, 2012) and acknowledges the ways in which these identities intersect and interact (Warren, 2005; Warren et al., 2014) in such a way that encourages individuals to build community and recognize and accept difference (Breunig, 2013). As a philosophy, similarly, experiential education makes use of hands-on interactions in such a way that encourages one's learning to lead to a larger outcome, and that holds transformative potential for students, both socially and environmentally (Breunig, 2013). According to Itin (1999):

> Experiential education is a holistic philosophy, where carefully chosen experiences supported by reflection, critical analysis, and synthesis, are structured to require the learner to take initiative, make decisions, and be accountable for the results, through actively posing questions, investigating, experimenting, being curious, solving problems, assuming responsibility, being creative, constructing meaning, and integrating previously developed knowledge. Learners are engaged intellectually, emotionally, socially, politically, spiritually, and physically in an uncertain environment where the learner may experience success, failure, adventure, and risk taking. The learning usually involves interaction between learners, learner and educator, and learner and environment. It challenges the learner to explore issues of values, relationship, diversity, inclusion, and community (p.6).

With goals of social justice in mind, philosophies of experiential education hold the potential to work towards critically informed teaching methods, emancipating students from the limitations of traditional models, and presenting the opportunity for children to become actors in their own lives. In addition, the encouragement of critical thinking and questioning within this educational model serves as a tool for freedom rather than as a tool for rote learning and the reification of existing social relations and practices (Duncan-Andrade & Morrell, 2008). This can be

particularly important for kindergarten age students, who at such a young age are very rarely consulted by adults in regards to the matters that directly affect their lives. In an inquiry-based model, students can learn to access their own personal agency by engaging with, and directing their learning from an early age.

Inquiry-Based Learning in the Outdoor Classroom

One classroom-based platform for student-centred experiential education that acknowledges the relationship between individuals and their social and natural environments is inquiry-based learning (Gordon, 2009; Savery, 2006). Inquiry-based learning specifically involves the open-ended investigation into students' intuitive queries with teachers serving as provocateurs in moving students forward in their own inquiries (Ontario Ministry of Education, 2013). In viewing children as knowledge-possessing and capable of critical engagement in their lives, inquiry-based learning places a focus on children's questions, observations and interpretations of the world around them as a primary method of instruction (Fielding, 2012; Scardamalia, 2002; Savery, 2006). In this way, inquiry-based learning can be seen as constructivist pedagogy as it is modeled on exploring students' personal worldviews, allowing an opportunity for educational praxis.

As a part of its Capacity Building Series, implemented as one effort to improve instructional methods in Ontario schools, the Ontario Ministry of Education has developed a document intended to act as a guide for implementing inquiry-based techniques into public school classrooms (Ontario Ministry of Education, 2013). Noting that educators have long struggled to effectively engage students in the learning process, the ministry's guide calls for transforming educational practices through methods that will support students "to become

thoughtful, motivated, collaborative and innovative learners capable of engaging in their own inquiries and thriving in a world of constant change" (Ontario Ministry of Education, 2013, p. 1).

Curricular benefits

Contemporary discussions of inquiry-based learning highlight the impacts that these methods have on the way that students acquire certain curricular goals. In particular, empirical research has shown that inquiry-based learning is becoming an integral part of children's engagement with science (Blair, 2009; Patrick, Mantzicopoulos, & Samarapungavan, 2009; Samarapungavan, Patrick, & Mantzicopoulos, 2011; Smith & Landry, 2013) and math concepts (Blair, 2009; Towers, 2010), as these subjects have traditionally made use of experiential and inquiry-based methods and can therefore more easily be adapted through the availability of the relevant learning materials (Ergazaki & Zogza, 2013). Science and math are also subjects that traditionally emphasize the development of students' skills of observation and analysis (Blair, 2009), therefore, lessons in these subjects often make use of inquiry-based learning in an effort to encourage children's curiosity and engagement in the particular subject areas (Ergazaki & Zogza, 2013; Patrick et al., 2009; Smith & Landry, 2013), thus enhancing their cognitive development (Blair, 2009).

Inquiry-based learning in kindergarten

Another application of inquiry-based learning is in kindergarten classes. It has been noted that inquiry-based learning has become a comprehensive component of kindergarten educational initiatives, as the innate curiosity of young children and their intrinsic interest in the world around them makes them ideal candidates for this experiential style of learning (Michalopoulou, 2014; Smith & Landry, 2013). As noted by Michalopoulou (2014), inquiry-based learning is very appropriate for younger students, as they have a unique way of exploring their environments,

including observing shapes and colours, movements, events, and natural phenomena, grouping and comparing, listening, sampling, touching and smelling. It has also been shown that kindergarten children are typically old enough to start to see themselves as learners (Alvestad, 2011). If they are encouraged to reflect on their learning experiences at this age, kindergarten students are more inclined to become engaged and active in their learning endeavours (Alvestad, 2011).

Outdoor learning

Distinctive for its emphasis on the child's natural inquisitiveness, encouragement of learning for everyday life, and promotion of a connection between children and their natural environments, forms of experiential education can occur across a variety of contexts, and are often closely tied to nature and outdoor settings (Blair, 2009; Desmond et al., 2002; Fenwick, 2001; Samarapungavan et al., 2011). Through its connection to natural life processes, the use of outdoor settings encourages students' sense of environmental literacy (Skelly & Bradley, 2007; Waliczek & Zajicek, 1999; Williams & Dixon, 2013). By allowing students to build connections between their learning and the world around them, outdoor learning engages students in several areas of the curriculum, including reading, writing, art, health, drama, and social studies (Blair, 2009; Dyment 2005), while providing a platform for integrated, interconnected curriculum initiatives (Dyment, 2005). Additional cognitive benefits have been noted; for example, Kellert (2002) promotes learning in nature as nature is constantly changing throughout the duration of the school year and is therefore an ideal site for children to try to make sense of their experiences and surroundings, thereby drawing deeper connections between children and their learning, and inspiring a stronger desire to learn compared to formal learning environments (Wake, 2008).

Not only does outdoor learning hold the potential to contribute to children's connection with curricular subject matter, it provides them with a unique opportunity to connect with natural environments and life processes as well as with their community and the larger political, historical, and social agents that interact with their lives. In providing children with an opportunity to reflect on their experiences as political, historical, and social beings, outdoor experiential education, when practiced purposefully, can create a platform for addressing social inequalities, and address the disconnection between theory and practice that has been identified in some forms of education. By breaking down the boundaries of the traditional school system, outdoor learning opens up an avenue for engaged thinking and the asking of critical questions.

As Breunig (2014) states, "issues of social and environmental justice are intimately intertwined and affirm that an experiential, environmental pedagogy is one means to work toward these forms of justice" (p. 74). Thus, outdoor classroom settings can provide a platform for social and ecological learning, allowing young children to develop a sense of meaning and context through their direct experiences with natural life systems (Antunes & Gadotti, 2005). If employed in an outdoor setting, inquiry-based learning could have the potential to exemplify a more holistic, environmentally and socially just model of education.

Chapter 2

Methods

In the following chapter I will present the study methods. I will discuss the study methodology and describe the data collection methods employed to explore kindergarteners' experiences in an outdoor, inquiry-based classroom. This chapter will include sections on: a) methodology, including constructivism; b) study site; c) participants; d) data collection, including interviews with kindergarteners, and interviews with teachers; e) ethical considerations when working with kindergarteners; and f) data analysis, including primary analysis phase, and secondary analysis phase.

Methodology

Qualitative research, as defined by Snape and Spencer (2003), is research that takes a "naturalistic, interpretative approach concerned with understanding the meanings which people attach to phenomena within their social worlds" (p. 3). This is not the only way that qualitative research has been defined, however, I employ this particular definition as it resonates with the purpose of this study, to explore kindergarteners' experiences in an outdoor, inquiry-based classroom. Qualitative research is descriptive in the sense that it seeks to illuminate the descriptions that emerge surrounding participants' unique experiences (Akerlind, 2012). This study is qualitative in that it seeks to richly describe kindergarteners' experiences in the outdoor classroom at Glynn A. Green School in Fonthill, Ontario.

In light of the study purpose, which is to explore kindergarteners' experiences in an outdoor, inquiry-based classroom, phenomenography was selected as the qualitative methodology. Phenomenography works to illuminate a phenomenon that has social meaning and transformative significance for both a researcher and her research participants (Moustakas,

1994). Phenomenography is an empirically based research methodology (Akerlind, 2012; Marton, 1981) in which the process of inquiry places an emphasis on the embodied meanings surrounding a phenomenon that stem from individuals' lived experiences (Finlay, 2009). Phemonenograpy examines socially transformative phenomena and aims to describe people's perceptions and experiences of phenomena within the social world, rather than aiming to describe the phenomenon itself (Marton, 1981; Sharma, Stewart, & Prosser, 2006).

Largely employed in educational studies (Ashworth & Lucas, 2000), this methodology has been described by Ashworth and Lucas (2000) as one that "seeks to identify the qualitatively different ways in which individuals experience such aspects of their world as teaching, learning, or the meaning of disciplinary concepts" (p. 295). This is done through the process of describing, examining, and explaining various phenomena through a subject's representation of their daily, lived experiences (Marton, 1981). In phenomenographic research it is important to recognize that each individual has a different interpretation of the phenomenon in question, and it is therefore beneficial to draw from the in-depth experiences of those who are directly involved.

Constructivism

Phenomenography is a qualitative research methodology that assumes a constructivist approach to its investigation. Constructivist thinking highlights the value of a subject's own representation of her or his personal lived experiences and recognizes that knowledge is not something that simply exists but is constructed by an individual in her or his interactions with the world (Gordon, 2009). Constructivists see individuals and their knowledge as socially and culturally embedded (Gordon, 2009) and emphasize the importance of praxis, previously described as the connection between theory and practice (Breunig, 2005), in an individual's involvement in the construction of her or his personal experiences. Phenomenography is a

constructivist methodology in that it reiterates the notion that people make valuable meaning through their own interactions with the world around them and seeks to investigate the way individuals experience various phenomena.

In educational research, phenomenography is seen as a constructivist methodology as it recognizes that while individuals' experiences in schools are confounded by fixed curricular initiatives, learners are simultaneously actively constructing their own conceptions of reality in order to make sense of the world (Marton, 1981; Richardson, 1999). Thus, phenomenography does not assume a dualistic relationship between an individual and the phenomenon being experienced, in which experience is seen solely as either constructed by the student or imposed on them (Akerlind, 2012; Marton, 1981). Instead, phenomenography is akin to the philosophical foundations of progressive experiential education, which recognize learners as active participants in the learning process (Gordon, 2009). In this way, phenomenography recognizes the need to acknowledge the influence of social and cultural influences on individual experiences while also positioning individuals as social actors or agents in their own lives, with "individually developed ways of relating ourselves to the world around us" (Marton, 1981, p. 181). Phenomenography thus puts an emphasis on exploring the ways people perceive the world in order to gain a better understanding of various social phenomena.

While phenomenographic philosophies point to the importance of acknowledging individual constructions of experience and of reality, it is important to note that when conducting phenomenographic research the focus of the investigation is on the collective, communal perceptions that a sample group has of a certain phenomenon, rather than on individual, unique views (Akerlind, 2012). This focus on collective experiences of a phenomenon is important in that it emphasizes the way that experiences are socially and culturally embedded. In this sense,

phenomenography uses individuals' voices to gain insight into the various aspects of a phenomenon that are socially significant, or shared by several members of a community (Marton, 1981). Phenomenographers note, however, that large variances can occur when investigating individuals' interpretations of a phenomenon and recognize that a phenomenographic study should attempt to address a range of possible experiences of the phenomenon in question as represented by a collective sample group (Akerlind, 2012; Marton, 1981). In line with phenomenographic methodology, this study incorporates a variety of voices from the population of interest and analyzes the participants' experiences as they relate to one another as well as on an individual basis, as will be discussed further in the data analysis section.

Study Site

The research site that was used for this study was Glynn A. Green Public School, one of three public schools located in Fonthill Ontario, a historical town within the Town of Pelham located in the Niagara Region (Hugh, 1994). With much of the area's industry traditionally stemming from fruit growing, at the time of this study, residents remained partly reliant on local farming initiatives as the region was expanding into a business center based on research and real estate development. These developments placed the community in a high socio-economic demographic (Town of Pelham, 2016) and the landscape somewhere in between suburban and rural (Environmental Defence, 2013). Glynn A. Green School was unique, as it was a public school that was home to three inquiry-based kindergarten classes.

While the study was being conducted, the school was in the process of installing an outdoor classroom space for the young students in these kindergarten classes to use as a part of their inquiry-based learning. At the time, the outdoor classroom space was still considered being under development, and spanned a small section of the school yard. The space that had been

established consisted of mulch pathways with willow arches for entrances. In between the pathways were garden beds with newly planted native plant species and around the pathways were some older maple trees and some newly planted oak trees. At one end of the outdoor classroom, there were large rocks positioned in rows similar to a classroom structure. The classroom was bordered by a running track and sandpit on one side and a grassy field on another. Outside of the boundaries of the outdoor classroom, the school yard also consisted of soccer fields, a metal play structure, a paved area with basketball nets, and a small gated area for the kindergarteners and daycare children to use. Photographs of the outdoor classroom space are represented in figures 2 and 3 below. This research study made use of the outdoor classroom space at Glynn A. Green as a site for an investigation into the experiences that kindergarten students have had in their outdoor, inquiry-based learning environment. The use of the outdoor classroom space as a research site will be explained further in the section on data collection.

Figure 2: Photograph 1 of the outdoor classroom.

Figure 3: Photograph 2 of the outdoor classroom.

Participants

The participant sample was composed of students enrolled in three kindergarten classes at Glynn A. Green Public School in the 2014/2015 school year and their teachers. Fifteen research participants were recruited for this study, twelve participants being kindergarten students, four students from each of the three kindergarten classes, and three participants being their teachers, one from each class. In keeping with phenomenographic best practice (Moustakas, 1994), the participant sample for this study was from a population of individuals who have direct experience with outdoor inquiry-based learning.

The gender, race, and socio-economic status of my participants were reflective of the students and teachers who participate within the kindergarten classrooms at Glynn A. Green, a school that resides within a predominately white, affluent neighbourhood. I was not focusing on

any specific demographic criteria for study participation as this study was interested in examining any child's experience in the three kindergarten classes. The young participants were kindergarten age (4-5 years old), as that was the age that was involved in outdoor inquiry-based learning at this particular school, and the ages of the teacher participants were not specified. Coincidentally, half of the students who made up the sample of kindergarteners in this study were male and half of the students were female, however, as previously mentioned, this was not controlled for during the sampling process.

Convenience sampling, which involves selecting participants on a first come-first served basis from the population at hand (Patton, 1990), was used to obtain the participants for this study. In this case, the participants were chosen from the three kindergarten classes at Glynn A. Green School based on voluntary participation. Although convenience sampling is seen as a less rigorous method for sampling in qualitative research, as Patton (1990) explains, all sampling in qualitative research is purposeful in that "qualitative inquiry typically focuses in depth on relatively small samples, even single cases, selected purposefully" (p. 169). In addition, Ashworth and Lucas (2000) caution the use of purposefully sampling for information-rich cases in qualitative research and contend that "the selection of participants should avoid presuppositions about the nature of the phenomenon or the nature of conceptions held by particular 'types' of individuals" (p. 300). In this case, the primary focus of data collection is on a small sample of kindergarteners and their teachers who were invited and subsequently volunteered to participate.

Participants for this study were recruited through formal invitations and informed consent letters (see appendix A and appendix B for letters of invitation, and appendix C and appendix D for letters of consent). Prior to the winter break in December 2014, invitations and letters of

consent were distributed to the three teacher participants and, with their assistance, the applicable materials were then distributed to the kindergarten students in their classes to take home for parental review. All three kindergarten teachers consented to take part in the study. Out of the 75 consent forms that were distributed to the kindergarten students, 38 student consent forms were returned within a month of their distribution. As previously mentioned, a sample of twelve participants was then selected based on a first-come, first-served basis. Of the twelve kindergarten students who were selected to participate in the study, two kindergarteners chose to withdraw verbally once the data collection process had begun and two substitute participants were chosen from the list, again on a first-come, first-served basis.

Additionally, during the data collection process for this study, one kindergartener requested to have a friend present during the interview process. Given that this friend was also a participant in the study, I allowed the two interviews to be conducted simultaneously, adapting the interview method to suit the needs of my participants. These amendments to the sample group and data collection method will be further discussed in the section on ethical considerations when working with kindergarteners.

Data Collection

Although various methods of conducting phenomenographic research have emerged over the past few decades since its formation as a methodology, interviewing remains the primary method of data collection (Akerlind, 2012; Askworth & Lucas, 2000; Richardson, 1999), as it is seen as the most appropriate way of obtaining a rich account of a participant's life and experiences from their perspective (Ashworth & Lucas, 2000). For this reason, interviews were used in this research study with both teacher and kindergartener participants. The interviews employed in this study were situated in phenomenological philosophy, which holds that the

researcher is responsible for creating a climate in which research participants open up and become personally invested in the project, allowing them to answer comprehensively and honestly (Moustakas, 1994). This climate is most often created through informal, open-ended interview discussions in which experiences are illuminated through comprehensive, vivid descriptions (Finlay 2009; Moustakas, 1994). These interviews are interactive in that although the researcher may develop her own interview questions in advance of the interview process, the questions are often shifted, altered, and sometimes omitted, as participants provide their accounts of the phenomenon and determine what is most important to them (Moustakas, 1994). The interviews conducted for this study were semi-structured, (see appendix E and appendix F for interview guides) and the questions asked in the interviews were open-ended to allow the participants to freely construct their own representation of their thoughts.

Interviews with kindergarteners

To conduct the interviews with the kindergarten participants, I visited Glynn A. Green Public School at the start of each school day during a period of the day that was designated for outdoor classroom time, from January to March, 2015. Depending on the weather, each morning all three kindergarten classes spent some time all together in the outdoor classroom space. Upon arriving at the school each day, I confirmed that the kindergarteners were in fact going to the outdoor classroom, and then selected a participant to interview from a list. The kindergarten participants were selected in the order in which they had returned their consent forms, and the initial four children were interviewed from each of the three kindergarten classes. As previously mentioned, the sample of participants was determined on a first-come, first-served basis from the population of kindergarten students at the school whose parents had consented to their child's participation.

To help the participants feel comfortable participating in the study, the interview process for the kindergarteners took place within the students' outdoor classroom environment. Interviews with the kindergarteners consisted of taking a tour of the outdoor classroom, guided by the participant. During each tour I asked the participant to tell me about her or his experiences in the outdoor classroom, and conducted the interview by posing questions while allowing the outdoor classroom environment to prompt further discussion, following recommendations made in similar research done with children (Ashworth & Lucas, 2000; Kalvaitis & Monhardt, 2012).

The questions that I asked the kindergarteners in this study (see appendix E for interview guide) were constructed based on the study purpose. Interview guides were written using support from literature regarding conducting research with children, as well as using my own knowledge of childhood development that has been informed by my experiences working and interacting closely with kindergarten age students for a number of years. The research questions were also piloted with three kindergarten age children who, at the time, were involved in gardening initiatives and were therefore participants in a form of outdoor learning. In order to simulate an environment similar to my desired interview location, the outdoor classroom at Glynn A. Green School, I conducted the pilot interviews with these children in their own outdoor learning spaces. I asked each child to show me around her or his respective area and to describe her or his experiences of being in the space.

The children who participated in the pilot interviews had varying responses to the questions leading each interview in slightly different directions. For example, one child who was enrolled in an extracurricular gardening course loved the social aspect of gardening and enjoyed digging in the dirt for worms with her friends, while another who was involved in community gardening liked working alone to water the plants. In conducting these pilot interviews, it was

made clear to me that each child would have their own unique perspectives on being in the outdoor classroom. I used this insight to guide me in conducting the interviews for this study, as it acted as a reminder to be open to hearing different, and perhaps conflicting accounts of students' experiences.

In conducting the interviews for this study, although the same key questions were asked to each participant, interviews, especially amongst the kindergarteners, generated a variety of responses. In order to account for the wide variety of responses from the participants, sub-questions were used as prompts to encourage participants to expand on their ideas. These sub-questions were often raised in the midst of an interview depending on how each participant had replied to my previous questions. I determined what sub-questions to ask based on what I thought would be most likely to probe the kindergartener to expand on her or his ideas, and in an effort to keep the interviews conversational. For example, the interviews were initiated with a conversation about each child's personal interests, suggesting to the young participants that their own experiences were important to discuss. I began the interviews by asking each kindergartener what she or he spent most of her or his time doing in the outdoor classroom. This initial question garnered a variety of responses such as run, look around, play, hide in the rocks, run on the rocks, play soccer, play tag, play pretend, make up games, and play on the paths. These responses led me to delve deeper into each child's experiences by asking more about the activities that they mentioned. I asked each child to expand on her or his ideas by telling me about the games that she or he liked to play or by showing me the particular spaces that she or he liked to use.

While some of the kindergarteners were more eager than others to show me around the outdoor classroom, leaving the questions open-ended and participant-centered allowed an

opportunity for all twelve student participants to speak about their experiences in a way that was meaningful to them. For example, Brandon (kindergarten participants will be referred to using pseudonyms) was quiet at first and when I asked what kinds of games he played in the outdoor classroom he replied saying he didn't know. He mentioned, however, that he liked to run, so I asked him to show me where.

Me: So what do you guys do out here? What do you spend most of your time doing in the outdoor classroom?

Brandon: Just running and playing.

Me: Running and playing? What kinds of games do you play?

Brandon: I don't know.

Me: Any ideas, like do you remember any games you guys play?

Brandon: Tag.

Me: Tag, yah, anything else?

Brandon: (.)

Me: Anything else you guys do, like other than play games?

Brandon: Run.

Me: You run? And how do you, where do you run can you show me? Can you show me around?

Brandon: ((Gets up and runs around pathways and through arches)) We go all the way. ((Jumps in sandbox))

Me: You go to the sandbox? Cool what do you guys do out here?

Brandon: Just dig. ((starts digging in frozen sand with a stick))

Brandon later revealed that he mostly spent time alone in the outdoor classroom. He talked about digging and building in the sandbox, leading to a discussion about the different kinds of things that Brandon would like to build for the outdoor classroom if he had the chance. Even though Brandon was reserved at first, by allowing his interests to guide the discussion I was able to learn more about his experiences in the outdoor classroom.

Interviews were open-ended; however, the interviews with the kindergarteners only lasted between 7 and 20 minutes, given the limited amount of time that they were able to focus on the discussion due to their young ages (Kirk, 2007). I had initially intended for the interviews to last approximately 15 to 20 minutes, as this was the average length of the three pilot interviews that I had conducted beforehand. Although it was expected that there would be some variation in the length of the interviews with the kindergarteners, the majority of the interviews ran shorter than expected. Since the interviews were conducted at a time when the kindergarteners were surrounded by their peers, it was easy for the participants to be distracted by their surroundings. While the young participants were often eager to begin the interviews, some had less to say nearing the end, and were ready to go back to their peers and join in the class' activities. Overall, the questions raised varying responses among the kindergarteners and while some students were quite engaged in the process, for others interest waned, and some simply did not wish to participate in the interviews. Interest levels of the various participants will be addressed further in the section on ethical considerations when working with kindergarteners.

The interview process was drawn out over the span of three months due to restricted access to the outdoor classroom throughout the winter months. Some days were too cold to go outside or to stay outside for any length of time. The winter weather was a factor in this study and extended the overall duration of the interview process but did not limit the study in any way.

In fact, in my opinion, it may have actually been advantageous to conduct interviews at slightly different times during the year because it provided a natural context for the different types of weather to become prominent in many of the interviews.

Interviews with teachers

Interviews with the teacher participants took place over three mornings before school hours, with one teacher interviewed each morning, in the month of March, 2015. These interviews took place indoors, in the teachers' respective classrooms at Glynn A. Green School, and lasted between 20 and 30 minutes. Teachers were interviewed in the mornings before the school day began in order to accommodate their availability. There were various instances where the interviews with the teachers were interrupted for one reason or another. For example, one teacher got a call from the administrator's office and another teacher had a knock at the door during the interviews. This was an indication of the constant workload that these teachers face both before and after school hours. For each teacher interview I sat with the participants at one of the kindergartener-sized round tables in their classrooms.

Conducting the interviews in the teachers' respective classrooms allowed for each teacher to be immersed in a comfortable, familiar environment during the interview process. With these interviews being indoors, however, the discussions with the teachers were informed more by the observations that the teachers had made during previous time spent in the outdoor classroom rather than by any observations that were being made in the outdoor classroom context itself. When answering the interview questions, the teachers would reflect back on things that they had previously witnessed when working with the kindergarteners in the outdoor classroom. For example, when asking each teacher participant whether or not the students had learned anything in the outdoor classroom, all three reported that the kindergarteners had participated in learning

in a variety of ways. Some of the teachers' reports focused on incidents that demonstrated that the students had been learning about personal and social development, while other times the teachers discussed the ways students were engaging with subject matter, such as math and science in the outdoor classroom. These perceptions were based on the teachers' previous understandings of various curriculum and inquiry-based initiatives as well as on past instances that stood out to them when working in the outdoor classroom. It was not possible for me to interview the teachers during their outdoor classroom time due to their vital role in the classroom. The roles of teachers in the outdoor classroom space will be further addressed in the discussion section.

Similar to the interviews with the kindergarteners, the open-ended nature of the teacher interview questions (see appendix F for interview guide) provided the teacher participants an opportunity to address the details that were most important to them. For example, when I asked Mrs. Corey (teacher participants will be referred to using their last names) about the way the students in her class make use of the outdoor space she mentioned that the outdoor classroom was still in the early stages of development. This led me to depart from the interview guide to ask other relevant, probing questions about what the outdoor classroom might look like as it becomes more developed, and how this might impact the way that the students engage with the space. In conducting the interviews in an open-ended way, each teacher's comments further informed the interview questions that she was asked in this study.

Ethical Considerations when Working with Kindergarteners

With the majority of the participants in this study being kindergarten age, there were important ethical considerations in conducting the interviews. For one, communication barriers between an adult researcher and kindergarten age participants can often be an inhibitor to the

process, causing a disconnection between the language used by children and by adults (Kirk, 2007). Not only is a child's comprehension of the interview a concern, many have noted that children's worlds are not often easily grasped by adults (Greene & Hogan, 2005; Kirk, 2007; Matthews, 2007). This conflict was evident in the data collection phase of my research, as there were instances in the interviews when the young participants were unsure what I was asking them and their responses did not address my question. This discrepancy was also evident in both the data collection phase and the transcription phase in instances when the responses of the kindergarteners were unclear or incoherent to me. With the interviews being conducted outdoors, at times there was wind and other noise obstructing the kindergarteners' statements. My attempts to mitigate the impact of outside noises such as wind throughout the duration of the interviews aided the participants' comprehensibility, and I increasingly asked the kindergarteners to clarify their statements in the interviews.

The potential disconnect between a researcher and her young research participants can lead to an imbalance of power, a great cause for ethical concern in qualitative research with young children (Christensen & James, 2008; Kirk, 2007; Nairn & Clarke, 2012; Palaiologou, 2014). According to Palaiologou (2014) "typically adults are the ones who pose what is and what should be for children; they are the decision-makers and the planners in the eyes of the children and, as adults, hold different levels of power" (p. 699). This imbalance of power could result in a variety of problems in research with children as "the unequal power relations that exist between children and adults are duplicated in the research process" (Kirk, 2007, p. 1252). For instance, a child may agree to participate in research without being fully aware of what it entails. It is therefore necessary that the entire research process from research design, to obtaining each child's informed assent, to the interview procedure, be conducted in such a way that it is

comprehensible to both parties and that the study be constructed in the interests of the participants (Kirk, 2007). In order to ensure that there is an opportunity for full and informed consent in research with children, a researcher must have what Nairn and Clarke (2012) call an ethical radar, allowing different ethical considerations to be addressed based on the context of each study.

For this particular study, clear language was used to obtain verbal assent from the kindergarteners prior to the study. For example, I made sure to reiterate the participants' rights to free and informed consent by telling the kindergarteners that I was doing a school project and asking them if they wanted to take a walk and tell me about their outdoor classroom. Each interview was recorded using an audio recorder and before each interview I clarified with each child that she or he had an understanding of the function of the recorder, and asked each child for her or his permission to record our conversation. In this research, although all of the students who had parental consent to participate also gave verbal assent prior to the interviews, there were two instances where kindergarten students who had initially given verbal assent were then unresponsive to the conversation. This was an indication that these individuals did not want to participate. I addressed these instances by reminding the participants that it was ok to withdraw and asking the participants questions like "Do you still want to talk to me, or would you rather go back and play with your friends?" As previously mentioned, in these cases, the two students who felt uncomfortable participating in the interviews chose to withdraw from the study and return to their peer group.

While it is necessary to acknowledge the developmental levels of young participants and to adjust interviews accordingly, it is also important not to patronize or undermine the abilities or thoughts of young people and to trust their responses to interview questions just as one would an

adult (Greene & Hogan, 2005). Based on a constructivist standpoint grounded in the new sociology of childhood, this research assumes that the views, opinions, and voices of adults should not be privileged over those of children, particularly when it pertains to children's lives (Mason & Hood, 2011; Matthews, 2007). This understanding helps to foster a sense of trust and rapport-building between an interviewer and young research participants.

The attempt to develop a mutual sense of trust between a researcher and her participants is one way to support young research participants in a manner that helps them feel comfortable to respond openly and honestly to interview questions (Alvestad, 2011). By establishing a sense of empathy and trust with her participants, a researcher has the opportunity to address some of the prevailing power dynamics when conducting research with children as participants. A similar study of young children's learning experiences demonstrated that this innate power dynamic can be mitigated through the use of a familiar interview setting (Alvestad, 2011). For this reason, as previously mentioned, the interviews for this study took place in the participants' outdoor classroom, allowing for a more comfortable atmosphere for the kindergarteners. Additionally, the inclusion of a kindergartener-guided tour in the interview process allowed each student to direct the interview in such a way that focused on the aspects of the outdoor classroom that were most important to them.

Even with these efforts to adapt to the needs of the participants, it was evident that children in this study had varied responses to the idea of participating in an interview from one day to the next. As previously mentioned, one kindergartener requested to have a friend present during the interview process. Given that this friend was also a participant in the study, I allowed the two interviews to be conducted simultaneously, adapting the interview method to suit the needs of my participants. Amending the interview in this way adheres to Nairn and Clarke's

(2012) view that "we need to be attuned to the fact that social shifts will also impact children's sensitivities and that ethics is an ongoing process rather than a static set of rules" (p. 195). These instances acted as a reminder that one's report of any experiences is not static and is always shifting based on the context of an interview. For this reason, the goal of phenomenographic research is to illuminate the various understandings of a certain phenomenon without attempting to reach any definitive positivist explanations (Akerlind, 2012).

As previously mentioned, each interview was recorded using a digital audio recorder. In an effort to ensure accuracy in the recording of the transcripts, I listened to the recording through once and then promptly transcribed each interview by listening to the audio recording after each interview and typing the conversation verbatim. Once all of the interviews were transcribed, I began the data analysis process by reading through each transcript individually. I then coded the transcripts, categorizing the data into topics, eventually leading to three primary themes. This process will be discussed further in the data analysis section.

Data Analysis

In phenomenographic research, data is analyzed through the "thematization of aspects of a person's experience that had not been previously thematized" (as cited in Richardson, 1999, p. 69). Phenomenographic data analysis is inductive, meaning that themes are not predetermined, instead they emerge from the data as the transcripts are coded (Akerlind, 2012). For informal open-ended interviews, coding is the process of labeling the transcripts in order to produce an index of the ideas expressed by each participant (Patton, 1990), eventually highlighting similarities and differences among the interviews (Akerlind, 2012; Sharma et al, 2006). Data analysis in qualitative research begins with this process of coding the transcripts, a process which

Patton (1990) describes as "simplifying the complexity of reality into some manageable classification scheme" (p.382).

Primary analysis phase

After transcribing the data for this study, the primary phase of analysis began with inductively identifying key ideas that initially emerged from the individual accounts of participants' experiences. This phase of analysis involved the coding of the responses of the participants by labeling central concepts in each transcript with letters, beginning with the transcripts of the kindergarteners. As described by Akerlind (2012), in phenomenographic research, "the first phase of the analysis is a kind of selection procedure based on criteria of relevance. Utterances found to be of interest for the question being investigated are selected and marked" (p.118).

For this study, key concepts were initially defined based on the recurrence of particular words and utterances throughout each individual interview. For instance, the words "play" and "pretend" were said multiple times in many of my conversations with the kindergarteners, leading me to identify both of these as significant topics of conversation throughout the interviews. In this initial coding process, I became aware that there were concepts for which the kindergarteners did not have predefined vocabulary, as well as instances in which the definitions that the kindergarteners' had of various words differed from mine. I subsequently read the transcripts looking for additional phrases and ideas to help assign these initial topics to inductively generated categories, as recommended by Patton (1990). For example, while none of the kindergarteners specifically used the word "space" in the interviews, many of them referred to navigating the space, the size of the space, and the rules of the outdoor classroom space, leading me to identify "the space" as another common topic. This process of defining key

categories was largely inferential, but as Akerlind (2012) explains, while some meaning may come directly from the utterances in an interview transcript, in phenomenographic research, interpretation of the themes must be made based on the research context.

This process of coding was repeated for each kindergartener's transcript and sticky notes were used to mark each quotation with a description of the relevant concepts. The initial list of codes that emerged from the interviews with the kindergarteners included ten key concepts reflecting the kindergarteners' various experiences in the outdoor classroom. The codes identified in the transcripts of the kindergarteners include: engagement with inquiry, learning through play and imagination, learning from others, learning personal interests, interpersonal learning, connecting with nature, learning rules, borders of the space, weather, and resources and supplies. The coding process that I employed when recording the findings from the kindergarteners' interviews is illustrated in Figure 4 below.

The main concepts that emerged from the transcripts of the kindergarteners were then used to code the transcripts of the teachers. I applied the concepts that emerged from the kindergarteners' transcripts and found that many of the concepts that were initially identified in the transcripts of the kindergarteners were also present in the transcripts of the teacher participants. During this process of coding the transcripts of the teacher participants, two additional key concepts emerged: learning curriculum in the outdoor classroom, and teachers' roles in the outdoor classroom. The coding process that I employed when recording the findings from the teachers' interviews is illustrated in Figure 5 below. These twelve overarching concepts became the subthemes for the evaluation of the data in this study. These subthemes were then used for a comparison of the data in the secondary phase of data analysis.

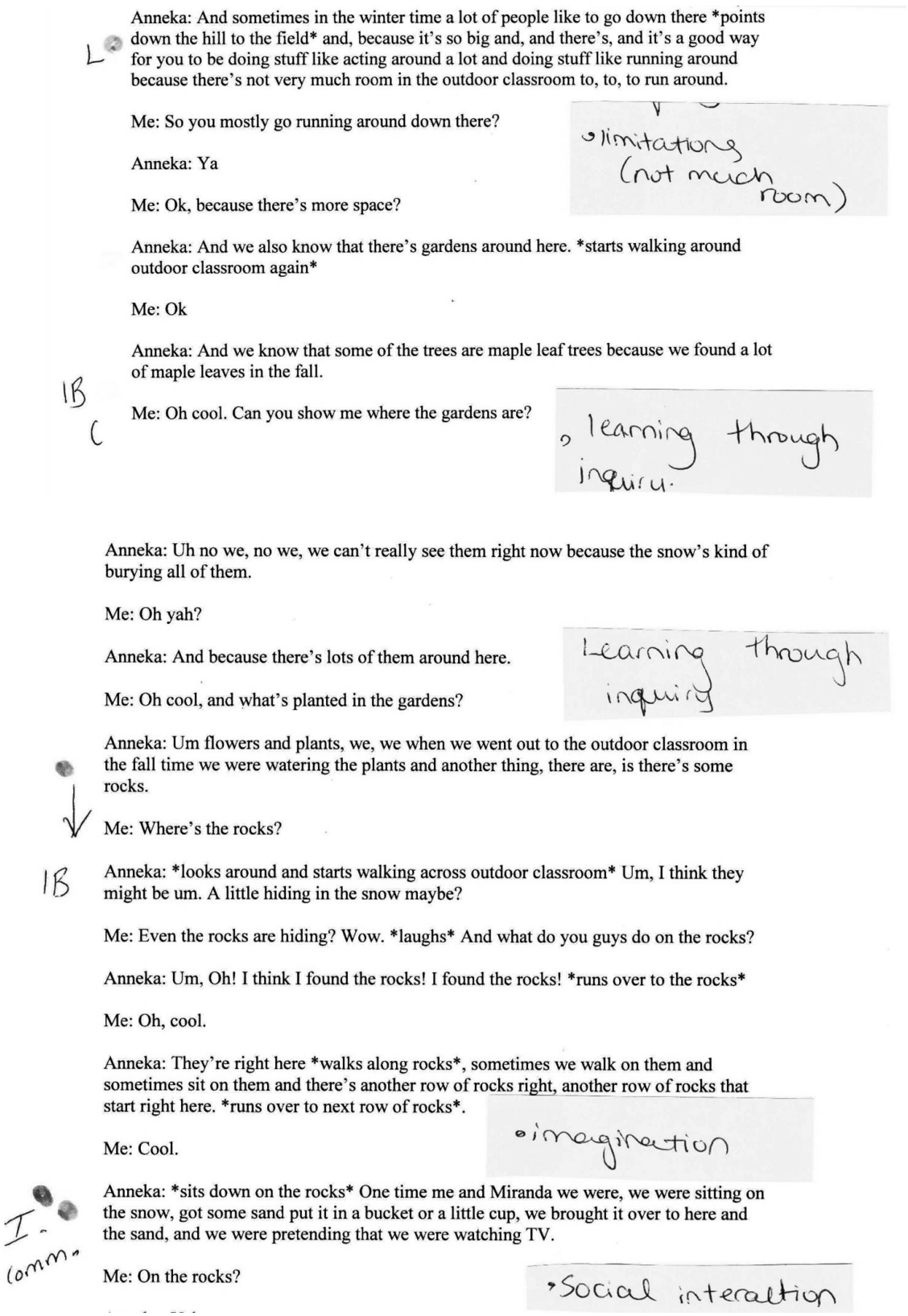


Figure 4: Transcript of kindergarten participant with coding.

saying and the way they communicated with each other was, like they grew a lot socially in that, in that experience. They had to ask for materials and work together on who's going to hold what branch and who's going to tie what string and how long should the string be and who's going to help here. So they're leaning how to get along in the outdoor classroom as well as science stuff and things like that.

Me: Great, um and so you've answered sort of, everythi
already but I'm going to ask you a little bit more specifi
that you're saying.

Mrs G: Ok

Me: So, um how do you think learning inside differs fr
of some of the differences that stand out?

Mrs G: Like outside there's all this space and it's easier for us to be calm like especially in the outdoor classroom when we're playing, um cause when we're, there's 30 kids in here in this four walled room it gets loud in here, its hard to concentrate sometimes, but when we're out there like it's really freeing I think for a lot of the children. Especially some of them that have a hard time like again socially, getti
when they're out there like, something is different out there,
easier to talk with other people, so can you read the questio

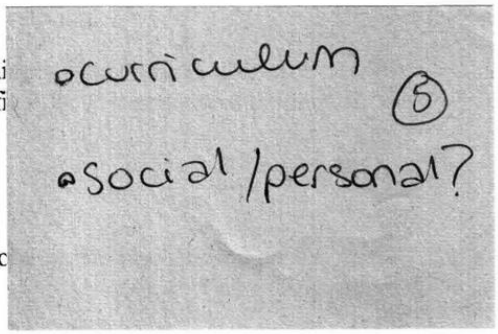
Me: Um how does learning outside differ from learning insi

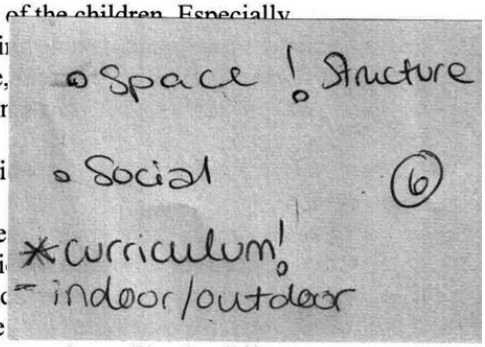
Mrs G: So because they are so, like they're more calm it's e
and discuss our theories when we're outside rather than insi
competing for like space and noise and whatever. Um outsi
as they occur whereas inside, like especially in science, like
seasons, like to look at pictures in books that's great, but to experience like the different kinds of snow, or when does ice break and when does it not break, or how to make ice or when does ice melt and all these, all those wonders, we can bring snow in here but it's more interesting to see what happens naturally out and their theories as they come about.

Me: So they sort of theorize why these things might be happening?

Mrs G: mhhmm. And we do some research in books too but it's we like that they are like re-thinking because sometimes their theory doesn't, like it doesn't pan out but then they have to go back and re-think it and discuss it with other people and that's how the learning happens between the children, they discuss and build on each other's theories. Um yah so just seeing things outside the way they naturally occur is better than reading about it in books. *laughs*

Me: Yah, great thanks. And um so going off of that as well,
mentioned that sort of saying that outdoor learning does sort
understandings of the curriculum, but what kinds of areas w





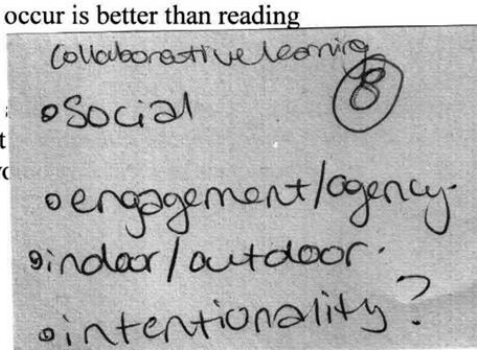


Figure 5: Transcript of teacher participant with coding.

Secondary analysis phase

In phenomenographic research, the secondary phase of data analysis involves clarifying each core concept by comparing and contrasting concepts between transcripts (Akerlind, 2012). For this study, the twelve preliminary categories were compared by highlighting and counting occurrences of these subthemes across all fifteen interviews to determine how often they appeared in the data. In this way, each transcript was analyzed in both the context of the individual speaker and then in the context of the larger sample group allowing for the transcripts of the young participants to be analyzed within the context of their classmates' and their teachers' transcripts, as per recommendations in previous phenomenographic research (Akerlind, 2012). This comparison was done in order to identify the ways in which the subthemes intersect and overlap, as well as the ways that the participants' accounts differ from one another. This comparison was ultimately used to create a range of responses in regards to the phenomenon, inquiry-based learning in an outdoor classroom. This process is in keeping with phenomenographic methodology which uses data not as a means to determine positivist explanations of causal relationships but instead to produce a synthesis of information in order to grasp meaning and essences out of individual descriptions of experiences (Akerlind, 2012; Lester, 1999; Moustakas, 1994).

In addition, this secondary phase of data analysis in this study involved incorporating the field notes that I had hand-written in a notebook throughout the interview process. The field notes that I had taken described the participants' expressions, emotions and activities during the interviews, as recommended by Ashworth and Lucas (2000). For example, some participants were eager to show me around the outdoor classroom, and were very active during the interviews, running around the outdoor classroom space and pointing out particular features,

while others tended to stay in one place, playing with items nearby like sticks or snow as we talked. Referring to notes that addressed the participants' expressions and emotions in the interviews allowed me to seek more meaning in the context of each answer than I had originally found in the primary phase of data analysis (Akerlind, 2012; Ashworth & Lucas, 2000).

Through examining the ways that the initial key concepts intersect and overlap and by referring to field notes to gain a more in depth understanding of the essence of the kindergarteners' responses, the initial key concepts that had been identified in the transcripts were then further categorized. The twelve initial subthemes were grouped into three major themes using colour coding methods. The three major themes identified were student-led experiences in the outdoor classroom, lessons experienced in the outdoor classroom, and boundaries to learning in the outdoor classroom. The final twelve subthemes and the way they fit into the three overarching themes of the study are illustrated in figure 6 below. Transcripts were then re-printed and each quote was cut out using scissors and sorted into clusters based on the three overarching themes. In instances when a single quote referred to multiple subthemes, I sorted the quote into what I determined to be the most relevant category.

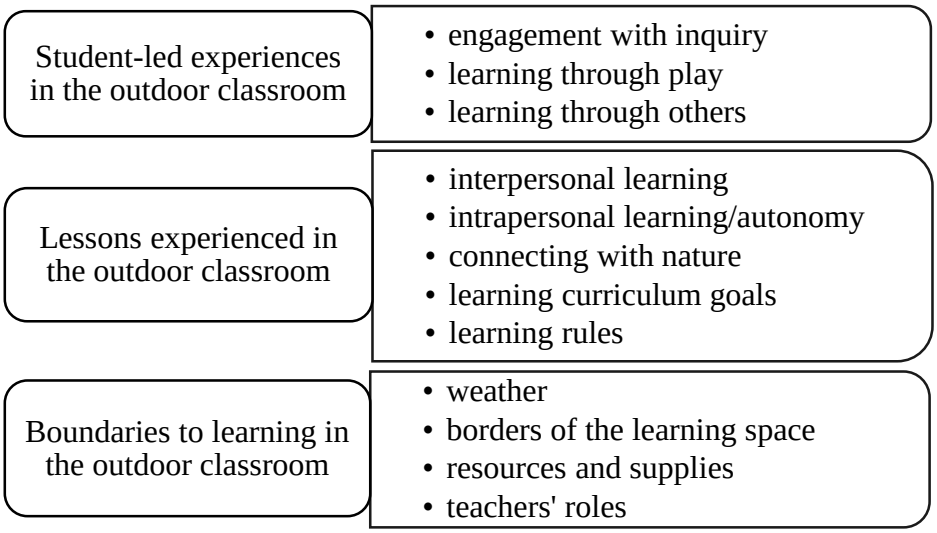


Figure 6. Themes and subthemes.

The final themes and subthemes that emerged from this data analysis process will be outlined in the following chapter on the findings of the study. As Akerlind (2012) states "the whole [data analysis] process is a strongly iterative and comparative one, involving the continual sorting and resorting of data plus ongoing comparisons between the data and the developing categories of description as well as between the categories themselves" (p. 118). In this study, the data analysis process involved continuously revisiting the transcripts over several months in order to reanalyse the conversations allowing the data to settle into the three overall themes according to the final descriptions of each category.

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Chapter 3

Findings

In this chapter I will present the findings from this study. While the frequency of occurrences of the three themes and thirteen subthemes is significant to the data in this study, it is important not to disqualify or exclude participants' uncommon experiences (Akerlind, 2012; Marton, 1981). For this reason, this chapter will largely discuss occurrences of the themes in the interviews through the reporting of various direct quotations from the participants rather than solely through the reporting of frequencies of the key words that were used. The quotations used will represent the variety of responses given by the participants in relation to the various key themes. These quotations will be presented alongside descriptions of the participants' verbal intonations, facial expressions and mannerisms as dictated by the field notes that I took during the interview process. This is in the spirit of phenomenographic research methodology, which aims to describe the essence of individuals' unique and collective experiences of a phenomenon, rather than to reduce the experiences of individuals to quantified, numerical data (Akerlind, 2012).

The three primary themes that emerged in this study are: (a) student-led experiences in the outdoor classroom, including engagement with inquiry, learning through play, and learning through others; (b) lessons experienced in the outdoor classroom, including interpersonal learning, intrapersonal learning and autonomy, connecting with the outdoors, learning curriculum, and learning rules; and (c) boundaries to learning in the outdoor classroom, including weather, borders of the learning space, resources and supplies, and teachers' roles. This chapter presents the findings of the study with minimal interpretation of the data. Data

interpretation will be presented alongside relevant literature in the final Discussion chapter that follows.

Student-Led Experiences in the Outdoor Classroom

The most prominent theme throughout all fifteen interviews in this study was the notion that the kindergarten students were guiding their own experiences in the outdoor classroom. All twelve kindergarteners that I spoke to talked about the activities that they liked in the outdoor classroom and why they enjoyed these activities, indicating that the space was informal and student-led. All three teachers also referred to the space as unrestricted and explained that outdoor activities were guided by the students' interests. The following subsections will provide quotations from the participants to demonstrate the ways that the kindergarteners in this study were guiding their experiences in the outdoor classroom space. The three subthemes corresponding to the theme of student-led learning in the outdoor classroom include: (a) engagement with inquiry; (b) learning through play; and (c) learning from others.

Engagement with inquiry

Nine out of twelve students discussed their engagement with the outdoor classroom space in a way that demonstrated that they had been participating in inquiry-based learning. For example, when I asked Chelsea how she spent most of her time in the outdoor classroom she talked about exploring the space. She said "Well me and my friend, um just like, like look around in the outdoor classroom. We just like go look around in the, in the arches." When I asked Anneka how she and her classmates spent their time in the outdoor classroom, she discussed some of the observations that she had made in the space. Anneka's remarks about the depth of the snow in certain areas of the outdoor classroom and about the strength of the willow

arches demonstrate her engagement with inquiry in the space and will be displayed through the following excerpt from my interview with Anneka.

Anneka: Um sometimes we, we, we, I found out that in the winter time when it's like deep snow like this you can go in the arch and the snow is sha… it's, it's, it's not so deep.

Me: Should we walk through? Which way do we go?

Anneka: Um through here this way. ((leads me towards opening of willow arch))

Me: Through here this way? Oh yah, the snow is not that deep here, why do you think that is?

Anneka: Because maybe the, the, branches are so strong that the snow, they keep the snow out.

As Anneka showed me around the outdoor classroom and described the trees, she told me "we know that some of the trees are maple leaf trees because we found a lot of maple leaves in the fall."

The interests of the students as guiding their inquiries in the outdoor experiences was exemplified by Precious who showed me a rock collection that she had gathered and by Robert who described a bug that he had found in the outdoor classroom. Similarly, Becky talked about the signs of new growth that she had observed in the outdoor classroom, and stated "and if you see a little, little green stuff where it grows here, up there you'll see some because I think there's some starting to grow and it's, and it's a flower arch too 'cause there's little fuzzy flowers."

All three teachers explicitly noted the way the outdoor classroom provided a space for engagement with inquiry-based learning. For example, Mrs. Corey described the outdoor classroom as a space that "draws out inquiry all the time" stating:

> They're [the kindergarteners] so young and so a lot of them have not a lot of life experience to draw from, right so they're so full of questions and curiosity that I would

> say it definitely lends itself to just naturally bringing that out in kids and developing those skills or helping to develop those skills.

When describing how the students spent most of their time in the outdoor classroom Mrs. Teather stated "whatever their imagination is doing that day" and explained:

> We try to encourage if they are showing an interest in nature like a bug or stick they found or a leaf or a rock, we try to really bring other students into that learning to see what we can do with it and how we can further that discovery or that investigation.

When I asked Mrs. Teather to compare learning outside to learning inside, she explained:

> I think it [inquiry] happens really naturally outside. It's usually their discoveries that guide the learning, where inside the classroom we try our best to also listen to their inquiries and go off of what they're doing, but outside it seems to lend really naturally to what they find interesting and their discoveries.

Mrs. Gall explained that:

> The outdoor classroom would spark us to wonder about things and then discuss with other people and often it's just, often it's just a discussion like on the spot with a friend or whatever, it just, naturally it just happens, that they just talk about what they think about why that's happening.

Acknowledging that this is a part of the learning process, she also stated:

> Sometimes it doesn't make sense but that's ok. A lot of the time they have like a valid reason to back up their theory so that like exchange of ideas is a big part of inquiry-based learning…They might design more experiments or they might look it up in a book or they might just continue talking about it and new theories emerge and we go from there.

These excerpts demonstrate various examples of the outdoor classroom as providing an engaging space for inquiry-based learning, one in which inquiry was spontaneous and sparked by the children's surroundings.

Throughout the interviews the use of the word "natural" took on multiple meanings. In some cases, the teachers referred to the children's inquiries, observations, and interactions with the outdoor space as "natural," meaning spontaneous, innate, or intrinsic. This understanding of the space as "natural" was used by the teachers when comparing the outdoor space to the traditional indoor classroom in which inquiries need more prompting and provocation, according to their reports. In other cases, the teachers referred to the outdoor space as being "natural" in that it was situated outdoors. While the different meanings were conflated in theses quotations, I will differentiate between them in my analysis.

Learning through play

Another prominent theme in my interviews with the kindergarteners was their participation in play in the outdoor classroom. All twelve kindergarteners talked about the different play-based activities that they participated in in the space, demonstrating that much of the learning that the kindergarteners had experienced in the outdoor classroom was done through play. When I asked the kindergarteners how they spent the majority of their time in the outdoor classroom seven out of twelve explicitly stated that they often spent their time playing, and throughout the interviews eleven out of twelve kindergarteners mentioned specific games that they liked to play in the outdoor classroom. The activities that the kindergarteners discussed when they talked about playing in the outdoor classroom included running, digging, working with the sand and snow, climbing, throwing snow, sliding down hills, jumping, imaginary

games, and structured games such as tag and soccer. All of these activities that were considered play by the kindergarteners provided important opportunities for learning.

One of the kindergarteners, Brandon, demonstrated learning through his experiences working and playing in the sandpit when he told me that it was harder to dig in the winter when the sand was frozen. Martin and Kenny talked about playing with the ants that they had found and eagerly showed their engagement with this learning as demonstrated in the following excerpt.

Me: So how do you guys feel when you're in the outdoor classroom?

Kenny: Good

Martin: Um last year we found ant places to gather the sand places and they went in the holes.

Kenny: Yah we, found those yesterday.

Martin: Yah we really found a lot.

Kenny: I wanna, let's go look at them.

Martin: Yah, let's go look at them.

Me: Do you wanna show me? Let's go see.

Martin: Let's grab our sticks too. ((Grabs a stick and runs towards the ants))

In this interview, Martin and Kenny interacted with the sticks and the ants in the outdoor classroom while they showed me around demonstrating their use of the physical space for play. This also occurred in my interview with Rose, when she jumped off rocks, ran around the space, and threw snowballs, and in my interview with Shane, when he ran around the outdoor classroom space and compared the sizes of the different trees tapping each of them with a stick.

Furthermore, one of the most common forms of play in the outdoor classroom that was discussed by the participants in this study was imaginary play. Eleven out of twelve

kindergarteners discussed imaginary play in the outdoor classroom as a common activity. Many of the students described in detail the different imaginary or pretend games that they would engage in in the space. Three of the twelve students mentioned the names of games that they had made up with their friends and two of the twelve kindergarten students mentioned using their bodies to act out pretend games. For example, Kenny explained that he liked to "act like doggies" when climbing on the rocks. Jenny said that she and her friends liked to play "house" in the outdoor classroom and to "make trains," and Chelsea described a time when she and a friend "played house and the arches were all the like, shops and our house."

In keeping with this theme, all three teachers discussed play as an activity that frequently occurred in the outdoor classroom in various capacities. Mrs. Teather remarked, "We see them [the kindergarteners] often coming up with different games outside where they're negotiating in the rules to a game." Mrs. Teather also explained that some of the forms of play that the kindergarteners participated in were quieter than others when she stated "We have some students who are using it for more of like a quiet time. Um they're sitting there with a few friends talking, sometimes they're role playing house but they're doing more quiet activities in the outdoor classroom." Mrs. Corey described similar games that she had observed, mentioning "low organizational games, so little games of tag or going for walks and just talking with friends."

The use of the kindergarteners' imagination in the outdoor classroom was also discussed by all three teachers when they explained the different ways that the students had been engaging in the space. Mrs. Gall cited one of the games the kindergarteners played stating "They play things like 'angry birds transformers', like they made up their own games like that, um and they pick characters and they chase each other and stuff like that." She went on to explain the way the kindergarteners used the structure of the outdoor classroom space for their pretend games. "In

the winter they find more like cozy nooks out there or they've been pretending like the willow branches are like a house or something, so then in their dramatic play that would be their house." When Mrs. Corey described the activities that the kindergarteners participated in in the outdoor classroom she reported that "a lot of the time it's um, just free play, kind of like imagination like made up games so little games of tag or going for walks and just talking with their friends.

Learning through others

When the students discussed their experiences in the outdoor classroom, ten out of twelve students mentioned playing or spending time with friends, and five out of twelve students mentioned specific friends that they particularly liked to spend time with in the outdoor classroom. Through conversations with the kindergarteners, many students conveyed that they were participating in learning through play, and in inquiry-based learning in the outdoor classroom through the facilitation of their peers. When I asked Emmett if he had learned anything while being in the outdoor classroom he described meetings that his class would have at the rocks, stating "Uh, we had, we talk about stuff, and we actually talk about frogs. We talk about toads and everything." Later on, when I asked Emmett what he thought his class might do in the outdoor classroom in the coming spring he replied "Uh, we will be playing and building together and stuff." These statements emphasize Emmett's experience learning through his peers in the outdoor classroom. Anneka more explicitly mentioned learning from a peer when she remarked that her friend "thinks that the leaves that are growing on these trees are salad leaves, and she ate some of them."

Rose also explicitly talked about learning from others when I asked her how she spent her time in the outdoor classroom. This finding will be reported through the following excerpt from my conversation with Rose.

Rose: Sometimes we ask questions and sometimes we do animal jokes…like we make little tiny animals, and sometimes we run around.

Me: What do you make animals out of?

Rose: Um our bodies. Like this ((gets on hands and knees like an animal)) that's a little doggie, and if you wanna be a cheetah you just ((runs on hands and knees and jumps in snow)) I'm ok.

Me: Woohoo, and did you say you ask questions?

Rose: Uh huh, we raise our hand and ask questions of what they are.

Later, when I asked Rose if she had learned anything in the outdoor classroom she stated "We learn animals because we show animals." In this statement the learning that Rose discussed experiencing was through demonstrations between herself and her classmates.

Moreover, all three teachers noted that the outdoor classroom provided a platform for students to engage in collaborative learning. Mrs. Gall noted that within inquiry, "Sometimes their theory doesn't pan out but then they go back and re-think it with other people and that's how the learning happens between the children. They discuss and build on each other's theories." Mrs. Teather described the way that she, as a teacher, tried to encourage students' learning through others in the outdoor classroom when she stated:

> Some [kindergarteners] are just exploring, um, so they're looking you know for bugs and you know maybe someone found a bug and that we've called everyone over to look at that bug and to look closely so some maybe are doing some investigating, some exploring based on what someone else found.

Mrs. Gall recounted a story about students searching for a snake on school property after another student claimed to have seen one nearby:

> Last year, um, they were looking, they wanted to find a snake because there was a rumour there was a snake in the schoolyard so they, we came together and we thought of ways, where we could look to find a snake and a lot of it was in the outdoor classroom where the rocks are because the kids did research and they discovered that snakes like to shed their skin in between the rocks, so we spent a lot of time around the rocks as a group trying to find the snake ((laughs))…and that's how it started, someone had found one, an older child had found one, and they were telling our kids stories so then our kids did research and they wanted to find one ((laughs)).

The teachers also talked about learning that happened through social interactions in the outdoor classroom. Mrs. Gall talked about a cooperative interaction between the kindergarteners when she told another story about a time when the students collaborated to fix a broken willow arch in the outdoor classroom. She stated:

> When we started the outdoor classroom one of the arches had broken and a few children who don't necessarily always get along decided they would take on this project and I stayed back and just listened to what they were saying and the way they communicated with each other was, like they grew a lot socially in that experience. They had to ask for materials and work together on who's going to hold what branch, and who's going to tie what string, and how long should the string be, and who's going to help here.

As demonstrated through the above findings, both interviews with the kindergarten students as well as with the kindergarten teachers in this study indicate that the outdoor classroom has provided a learning space for the kindergarten students to guide their own experiences. The less formal structure of the outdoor classroom has facilitated a space for the kindergarten students to engage in learning through their inquiries. These inquiries were often

sparked through play-based activities that the kindergartens participated in, as well as through the inquiries and teachings of their peers.

Lessons Experienced in the Outdoor Classroom

All twelve of the students that I interviewed for this study mentioned learning that they had experienced in the outdoor classroom, either directly or indirectly. When I asked the kindergarteners if they thought they had learned anything in the outdoor classroom, eight out of twelve students recognized that they had been participating in learning while they used the outdoor classroom space. These comments indicate that there were students who were not directly aware that they had been learning in the outdoor classroom. The manner in which the kindergarteners understand and articulate learning will be further explored in the Discussion chapter.

The following subsections will provide quotations from the participants to demonstrate the various lessons that the kindergarteners in this study experienced in the outdoor classroom space. The five subthemes corresponding to the theme of lessons experienced in the outdoor classroom include: (a) interpersonal learning; (b) intrapersonal learning and autonomy; (c) connecting with the outdoors; (d) learning curriculum goals; and (e) learning rules.

Interpersonal learning

By acting as an open space for the kindergarteners to participate in self- and peer-guided learning, the outdoor classroom has provided opportunities for the students to work and play together in ways that supported their engagement in their surroundings. As a space for cooperative learning, the outdoor classroom has facilitated the building of communication skills among the students. As previously mentioned in the section on learning from others, many of the kindergarten students interviewed discussed their activities in the outdoor classroom as being

social and cooperative in that much of their time was spent interacting with their peers. Although none of the kindergarten students directly addressed the notion of learning communication skills in the outdoor classroom, eleven out of twelve of the students that I interviewed discussed their experiences in the outdoor space as being experiences that they had shared with their peers, demonstrating the opportunity that the outdoor classroom provided for engaging with one another.

One kindergartener, Becky, discussed collaborative learning when she described constructing the outdoor classroom space. Becky told me about how she had been involved in the process of originally constructing the outdoor classroom space, but was clear to explain that she was not the only person involved in the process and that she had been working with others to accomplish their goals. Three other students also mentioned this construction process. I will present this result through the excerpt from my conversation with Becky below.

Me: Very cool, did you plant the beans?

Becky: Um, no ‘cause the other people planted them.

Me: Who planted them?

Becky: I don’t know.

Me: But you got to pick them?

Becky: Mmhm ((nods yes)).

Me: Very cool, what else did you do out here? Or what else have you done out here?

Becky: Um we done that, um we done, um we planted them with some, and we didn’t plant them but we did put um the sticks [willow arches] in it. And they digged a little hole for us.

Me: Oh cool, these sticks here? ((Points to willow arches)).

Becky: Yah.

Me: So you put the arches in? And they dug a little hole for you to put the sticks in?

Becky: And it was breaking in the summer time and now it's breaking in the winter time.

I went on to ask Becky if she had planted any of the other trees around the space:

Becky: No, but at summer we came out and helped them…we had to bring some supplies and…

Me: What kind of supplies did you bring for them?

Becky: Um we bringed water cans to water it to grow, and we brought some shovels to dig the dirt and put some more in, and we brought a wheelbarrow in, we brought some string in to tie it.

Me: What did you tie?

Becky: The arches so it didn't fall.

These excerpts demonstrate that Becky saw herself as a part of the process of constructing the outdoor classroom, but that she also recognized that in participating, she was a part of a larger team of people who were working together. These instances of working and building together reveal opportunities for the development of communication skills amongst the kindergarten students.

All three of the teachers that I interviewed discussed the ways the kindergarten students had been developing social skills in the outdoor classroom space through negotiating social rules. Mrs. Gall explained that the negotiation of social rules among the students was often done through the games that were played. She remarked:

> They are also learning like how to get along, like social rules, like as they play their games they have to negotiate rules with one another and the outdoor classroom provides that space, the openness for them to do that.

Mrs. Teather echoed the way that the kindergarteners used the outdoor space to negotiate social rules through play when she mentioned:

> Even our social, um our personal and social development, like we're learning ways to like you know, engage each other in different conversations. Even just when we're playing outside, um they [the kindergarteners] have more of an opportunity to step into play and say can I play, and then turn taking. It happens in our classroom too, but it also happens naturally outside where they have space and time um to develop those games and develop those rules and to try to work on their personal social skills and turn taking.

Mrs. Corey emphasized that the outdoor classroom provided space for the kindergarten students to interact with different social groups, especially when the three kindergarten classes made use of the outdoor space at the same time. She stated:

> I have the class of 14 so sometimes they get through playing with all of their friends and they're kind of done with just seeing the same small group of friends. It's nice when we do go outside and we get to join up with the other two classes because each of the other classes has almost double the kids.

When I asked Mrs. Corey to compare learning inside to learning outside she explained:

> Whereas something that might happen in the classroom, you know someone came down and sat in the chair that you wanted to sit at at snack or during an activity, well that could turn into something really big pretty quickly within the classroom, because there's not much other space to go to. But out there it's just more open and more relaxing or something…the kids are able, better able to just kind of figure their things out on their own and like get over things a little easier and move on and do something else.

Mrs. Gall reiterated the way the kindergarteners practiced communicating and working together in the outdoor classroom in her story about the students coming together to fix the willow arch in the space. She recalled:

> When they had to fix that arch, like the way that they learned to talk to one another because, I mean they're four and five years old, sometimes there's no nice way to say *stop it*, like they'll just sometimes, they'll raise their voice and they'll yell and that's not a nice way to talk to a person but during that whole fixing of the arch the kids were calm and they were using more manners, they were like *can you please pass me the*, I mean it wasn't perfect but it was huge growth for some of those children that were involved in that. The way they relied on each other and grew in the way that they talked more nicely to each other to fix the problem and the way they celebrated after they fixed it. Because they did fix it which was neat. I was going to give up but they persevered through it and they learned as well that if you keep working at something you can achieve your goal and sometimes it's hard, and you can get other people's opinions and work through it.

She emphasized the way the informal nature of the outdoor space had assisted some of the students in developing more effective methods of communication when she stated "especially some of them that have a hard time like again, socially, getting along with others in here, when they're out there like, something is different out there, like they're more patient, it's easier to talk with other people."

Intrapersonal learning and autonomy

With the opportunity to guide their own learning in the outdoor classroom, the space not only allowed the kindergarteners to learn about others, it also allowed them to learn more about themselves. In participating in learning activities that suited their desires and needs, the kindergarten students were able to test and explore their interests and learning styles as well as to develop their sense of autonomy. The lack of direct instruction in the outdoor classroom was evident throughout all twelve of the interviews with the kindergarteners as they described the

different student-led activities that they engaged in the space. When I asked the students what they spent most of their time doing in the outdoor classroom, all twelve of the participants described activities that were guided by their interests, thus demonstrating the use of their autonomy in the outdoor classroom.

For example, Brandon's interest in digging in the sandbox was a prominent part of his interview as he explained that he spent most of his outdoor classroom time digging. Personal interest was also evident in my interview with Robert who eagerly explained, when I asked him how he spent his time in the outdoor space, "we can play whatever we want". In addition to being able to explore their own interests in the outdoor space, Becky indicated that she and her classmates were able to decide who they interacted with in the outdoor classroom when she stated "Yah, I only play with two [friends] out here but lots of friends are playing by their self out here."

As Anneka explained what she and her peers spent most of their time doing in the outdoor classroom, she talked about the way they made use of the space in order to fit their own needs. She stated:

> Sometimes in the winter time a lot of people like to go down there ((points down the hill to the field)) and, because it's so big and, and there's, and it's a good way for you to be doing stuff.

In this excerpt Anneka described the way her classmates made use of the whole schoolyard when they didn't feel that they had enough room in the designated outdoor classroom space. This demonstrates the way the kindergarteners used their autonomy in the outdoor space to govern the rules of their activities.

Furthermore, when I asked the three teachers what the students spent most of their time doing in the outdoor classroom, they all reported that the students had the opportunity to participate in various activities that were guided by their interests. The majority of the time these activities involved various forms of play, which facilitated much of the learning in the outdoor classroom, as previously discussed. By guiding their learning based on their interests in the outdoor classroom, kindergarten students had a sense of agency over their classroom experiences. All three teachers discussed the outdoor classroom as a space where there were opportunities for the kindergarteners to learn about their personal interests and learning styles. When I asked Mrs. Teather how the kindergarteners spent their time in the outdoor classroom she explained, "They do different things kind of based on their personality or their interests. I think it's just giving us an opportunity to create those sparks and see what they're interested in."

Mrs. Gall discussed the outdoor classroom as a space that brought out the different interests of each student. She emphasized that this created an opportunity for the kindergarteners to take on various roles in their daily activities. Mrs. Gall explained:

> Some of them are learning what they're interested in, um like we have a lot of kids that will spend time in the sandbox, they love digging, they love um working in there and getting, like they'll hire workers to come help bring dirt or whatever and then they'll become leaders and they know that they like to do that kind of thing.

Mrs. Teather discussed the importance of practicing different learning styles and how the outdoor classroom allowed the students to learn in different ways. She stated:

> The kids are using it how they want to, we're not structuring it, like I said if they need to run and use their bodies they are, if they want to use their imaginations outside to play, you know, they're playing house you know, within the arch, and the arch is their house

and they're doing that. If they're, you know, being thoughtful and looking at nature then they're doing that, so it just lends itself to all those learning types.

Mrs. Teather also explained the way the surroundings of the outdoor classroom created a space where the kindergarteners could slow down and begin to listen to their bodies and their surroundings stating, "We've been trying to teach them some self-regulation, just calming their bodies down, and I think that the outdoor classroom has been a good place for them to do that."

Connecting with the outdoors

Another aspect of learning experienced by the kindergarteners in the outdoor classroom was the students' exposure to elements of the outdoors. Both the kindergarten students and their teachers described the ways that the kindergarteners engaged with aspects of the learning space through their intuitive interactions with their surroundings in the outdoor classroom. Interactions with the elements of nature in the outdoor space were mentioned by all twelve kindergarten students in some capacity throughout their interviews. When I asked the kindergarteners if they had learned anything while being in the outdoor classroom, six out of twelve kindergarteners explicitly discussed learning about things associated with the outdoors, and three kindergarteners mentioned ways that they learned to care for the more natural elements of the outdoor classroom. Additionally, ten out of twelve of the kindergarten students visually demonstrated the outdoor classroom as a space to connect with the outdoors through their interactions with the more natural components of the space during the interviews.

When I asked Shane if he had learned anything while being in the outdoor classroom he talked about how the recently planted trees were being protected.

Shane: Like when all the snow's gone, probably, probably they'll take that off ((points to a tree with a wrap on it)) when all the, when it's warm and hot because I think trees like hot.

Me: They like hot, ok.

Shane: And warm, they like warm.

Me: Ok, and what's that for? ((Points to the wrap on the tree))

Shane: Um, um it's a coat for the tree. The parts that are sticking out, it's that part that's only cooler.

During my interview with Anneka, she walked around showing me the trees that were still baby trees, and when I asked her if she had learned anything in the outdoor classroom Anneka stated "I think that I've learned that, how plants have to be taken care of." She continued explaining, "we water them, and we, and we don't pick things off of the arches, we don't pick branches off of the arches." When I asked Chelsea what she had learned, she also discussed care of the outdoor space stating "If you um, plant the arches like, bend them, um they could get like all crooked" and explained that the students would tell the teacher if the branches ever needed fixing.

In my interview with Shane, he climbed up on the rocks, picked up a big stick, and began to try to break the ice below him with the stick. Emmett also dug in the snow during his interview and Rose threw snowballs in the air. Brandon tried to dig in the frozen sand, and Jenny used a stick to scratch the ice off of a rock during their respective interviews. In my interview with Martin and Kenny, in addition to using the sticks to show me the ant hills that they found, as previously mentioned, the two also climbed on the rocks, jumped off the rocks, and chipped away at ice with sticks while they showed me around the outdoor classroom.

My interviews with all three kindergarten teachers reiterated the way the students had been engaging with their surroundings in the outdoor space. Mrs. Corey discussed the

kindergarteners' connection to the nature-based environment, and described the way they had learned to be conscious of their surroundings when in the space. She stated:

> They're careful not to walk through the garden beds and onto, like on the plants and things like that, so I think again indirectly just maybe a little bit of an appreciation for nature and plants and things that are growing has kind of developed just naturally. They're just a little more careful of where they step and again, the cedar chips, like the paths through, I think have helped define that.

Mrs. Corey followed this up stating:

> Some of them do kind of connect with the plants and things like that so they're kind of into checking out what's growing there and just different things that they're noticing, whether it's wildlife or leaves on the plants and things that are changing.

Mrs. Gall also talked about the changes that the students had been observing in the outdoor classroom over different seasons. She said:

> In the spring we'll notice a lot of growth in the outdoor classroom and in the fall the kids were documenting some of the changes, like the leaves were changing so they were taking pictures of what they noticed. We've been talking about the natural changes that we notice outside.

Mrs. Teather expressed that the outdoor classroom provided an opportunity for the teachers to encourage the kindergarteners to be more aware and considerate of their surroundings, even in the winter weather. She explained "even though it's different nature and it's maybe not those stones and sticks and bugs, we're still trying to always bring it back to being thoughtful and looking and appreciating the nature outside and around us." She later expanded

on the notion of connecting with elements of nature through the outdoor space stating "I think that just being in that outdoor space gives us an opportunity to really look closely at something."

One finding relevant to this subtheme of connecting with the outdoors that is contrary to much of the evidence presented in the interviews conducted for this study, indicates that although the students were in fact interacting with and learning from elements of nature, they were not always learning to be careful in their surroundings. I will present this observation through an excerpt from my dialogue with Martin and Kenny below.

Me: Do you guys think that you learn anything from being in the outdoor classroom?

Kenny: Mmmm. ((Shrugs))

Me: You don't really know? Can you think of anything that you might have learned from being out here?

Martin: Even we wanted to destroy these. ((Digging with stick in the sand around ant hills))

Me: You wanted to destroy these? How come?

Kenny: I think I just dropped a puck of sand down in that and hole.

Me: ((Laughs)) so you guys don't really think you learn anything from being out here?

Kenny: No, only from these ants. ((Digging with stick in the sand around ant hills))

Martin and Kenny's interactions with the ants will be examined further in the Discussion chapter.

Learning curriculum

While none of the kindergarteners directly identified that they had been learning any curriculum initiatives in the outdoor classroom, eight out of twelve students indirectly referred to experiences in the outdoor classroom that were relevant to different areas of the curriculum as outlined by the District School Board of Niagara (DSBN). For example, two participants, Martin

and Kenny, showed engagement with the science curriculum when they pointed out the ant hills outside and described the behaviours that they had observed from the ant colonies. The two went on to hypothesize how the ants might have gotten food and drinks in and out of the ant holes. Another aspect of the curriculum, art, was mentioned when I asked Becky if there were any activities in the outdoor classroom that involved the whole class. Becky explained "Um, I would colour or I would play out here. And yester-um at spring there was rocks out here to sit on and we got to colour some things out here." Shane touched on math concepts when he looked at the trees from varying distances and described how the dimensions of the trees appeared to change as he walked further away.

All three teachers noted that the outdoor classroom provided an environment for the kindergarten students to learn a variety of curriculum initiatives. Mrs. Corey remarked, "any of our curriculum expectations or any of the kind of subject areas that we cover in the kindergarten program can definitely be seen. It touches upon a whole bunch of different subject areas." Mrs. Gall explained "our curriculum is so together that like it's all happening out there not just one specific subject", and emphasized the use of the outdoor classroom in teaching math and science.

> Mrs. Corey broke down the subject areas further when she went on to explain that:
>
> Any given day depending on what they're [the kindergarteners] doing you can look at kind of what's happening there and you can see elements of like personal and social development, health and physical activity, science, there's literacy, sometimes there's math if they're talking about like patterns that they see.

Mrs. Corey discussed the way that interacting with the outdoors, and with one another in the outdoor classroom gave the kindergarteners an opportunity to practice gross motor skills,

science, literacy and oral language skills by "the fact that they're just out there going for walks and talking about what they see and you know, questioning one another."

Mrs. Teather echoed this sentiment about the way curriculum emerged in the outdoor space stating "I think we can find math outside, you know we can count things, we can talk about different attributes that you know leaves have, we can find ways to sort them." Mrs. Teather also discussed students' engagement with language and arts curriculum and explained that, "sometimes we'll bring out clipboards to write about what they're seeing, and do art, they're drawing what they see outside." While Mrs. Corey stated:

> I've seen some kids out there who have taken books out there and so I've had kids out there like reading even just enjoying their time reading in the outdoor classroom. We've taken clipboards out there and allowed the students to just have like paper and clipboards and some of them have done some drawings.

When I asked Mrs. Gall to compare learning inside to learning outside she talked about the way the outdoor classroom engaged students in areas of the curriculum. She explained:

> Outside we can see things naturally as they occur whereas inside, like especially in science, like say we're learning about the seasons, like to look at pictures in books that's great, but to experience like the different kinds of snow or when does the ice break and when does it not break, or how to make ice or when does ice melt and all these, all these wonders. We can bring snow in here but it's more interesting to see what happens naturally outside and their theories as they come about. Just seeing things outside the way they naturally occur is better than reading about it in books.

Learning rules

Four of the kindergarten students discussed the rules that they had learned in the outdoor classroom. Although this theme was not evident in my interviews with the kindergarten teachers, it is important to mention learning rules as a subtheme of lessons experienced in the outdoor classroom, as it demonstrates the way that learning was influenced by the cultural and social context of the learning environment. For example, learning the rules was a prominent theme in my interview with Becky:

Me: So what else do you do on the rocks?

Becky: Um, we hop but we can't run 'cause some people fall off, there was a big edge and the teachers were scared that they were gonna fall and hurt their self.

Me: Oh ok, yah so you have to be careful on the rocks?

Becky: Like inside, if you get hit by a block on your head that would hurt.

Me: Yah, so what other kinds of stuff do you do inside that you can't do outside?

Becky: Um, we can't be silly out here and bump into the arches and we can't be silly inside or run around.

Me: Ok, is there anything that you can do outside that you can't do inside?

Becky: Um, we can, we can walk through the arches and we can touch them gentle and so they won't break. Um you can't like pull the arches out, and you can't pull the blocks out when a teacher says no.

Me: Cool, what kinds of stuff did you learn in the outdoor classroom?

Becky: Um we learned not to touch them [the arches], and we learned um, we learned not to pull them out. Um that there's some things that you can't touch, like you can't touch the string and pull them off because it will fall on somebody in the outdoor classroom and that's all I know.

Jenny discussed safety when she said that she and her peers liked doing cartwheels in the summer but couldn't do them in the winter in case it was icy. When I asked Jenny if she had learned anything in the outdoor classroom she stated, "Um, yes. I think we've learned not to jump on the rocks." Furthermore, when I asked the kindergarteners if learning outside was different from learning inside five of the kindergarteners told me that they weren't allowed to run inside but could run in the outdoor space. For example, Anneka explained to me, "Um, we can run out here but we can't run inside and we, and we always have to use our indoor voices…and, and we always have to remember not to wrestle." Anneka later pointed out some cardboard that was sticking up through the snow. When I asked her what the cardboard was for she replied, "Um, it's for not stepping in the gardens." Although the function of the cardboard was in fact to keep the weeds down, and not to stop people from stepping in the gardens, in this excerpt, Anneka demonstrates that the rule of not stepping in the gardens had been instilled in her throughout her time in the outdoor classroom.

As demonstrated through the above findings, both interviews with the kindergarten students as well as with the kindergarten teachers in this study indicate that the outdoor classroom has provided a learning space for the kindergarten students to participate in various learning experiences. In the outdoor learning space, the kindergarteners have experienced learning about their peers and working with others, practicing their autonomy and learning about themselves, learning about outdoors and awareness of their surroundings, learning curriculum goals, as well as learning rules about their learning domains.

Boundaries to Learning in the Outdoor Classroom

A recurring theme throughout all fifteen interviews that I conducted for this study was the boundaries to learning that were evident in the structure of the outdoor learning space. As

previously mentioned, the space was discussed as being less structured; however, conversations with both the kindergarteners and the teachers referred to the various ways that the students' experiences were shaped by external factors in the outdoor classroom space. While the teachers referred to the ways that they were supportive of the autonomy of the kindergarten students, there were limitations placed on this autonomy based on the context of the outdoor classroom as well as the physical and illusory barriers to the space. The following subsections will provide quotations from the participants to demonstrate the relevance of the structure and context of the outdoor classroom to the kindergarteners' experiences in the space. The four subthemes corresponding to the theme of barriers to learning in the outdoor classroom are (a) weather; (b) resources and supplies; (c) borders of the learning space; and (d) teachers' roles.

Weather

Despite the informal structure of the outdoor classroom, some of the physical elements of the space were presented as boundaries to learning in the outdoors throughout my interviews with both the kindergarteners and their teachers. One instance of this was regarding the weather. Eleven out of twelve of the kindergarten students and all three of the teachers that I interviewed for this study mentioned the weather as a boundary to participating in various experiences in the outdoor classroom. Additionally, three of the kindergarten students explicitly stated that they didn't like being outside when it was cold. It is important to note that much of what the kindergarteners discussed in their interviews was based on their interactions with their direct surroundings at the time, as demonstrated in various ways throughout this chapter. With the interviews taking place during the winter months, having the winter elements present during the interviews played a part in prompting the kindergarteners to discuss some of these elements.

When Becky mentioned the seasons, I asked her if she spent a lot of time in the outdoor classroom in the winter months and she remarked "We come out a lot when it's not that much cold." When I asked Anneka if she spent a lot of time in the outdoor classroom in the winter time she said "No." and told me "sometimes we come out in the morning time and don't come out in the afternoon. Sometimes we come out in the, in the, we don't come out in the morning but we come out in the afternoon."

When approaching the outdoor classroom in my interview with Robert, he explained that his class hadn't been using the space very much at that time:

Robert: There's, it's kinda uh messy right now.

Me: Why is it messy right now?

Robert: Because we don't really use it and one of them [the willow arches] is kind of breaking.

Me: Ok, why do you think that is?

Robert: Because of the wind.

Me: Yah, the wind, because of the weather. So do you guys still come out here in the winter?

Robert: Well, only sometimes.

In addition, when I asked Rose if she thought she had learned anything in the outdoor classroom she explicitly stated, "We don't learn outside, we learn everything inside the school where it's warm." When I asked her why she thought they participated in learning in the indoor classroom and not outside she said, "Because it's too cold outside sometimes."

Although the teachers all discussed ways that the students would make use of the outdoor space in the winter weather, they also mentioned winter as a limitation to spending time outside. In my interview with Mrs. Corey, when I asked her what the kindergarteners spent most of their time doing in the outdoor classroom she started off by saying, "I mean it depends on what the

weather is doing," and explaining that the activities that occurred were seasonal. She further expressed this as a limitation when she explained:

> Uh, winter time we actually haven't spent tons of time right in and around the outdoor classroom, I'd say uh mostly for safety reasons just because of the ice and the rocks and things like that so it's kind of been a space that we've tended to avoid. Um there were some kind of sunnier, nicer days in the winter that we were able to kind of utilize the entire field out there.

Mrs. Corey also talked about the rocks as dangerous, stating:

> There are rocks out there which is great although sometimes depending on if it's wet or again in the cooler weather they tend to get quite slippery so not the safest thing to play on, more for like seating or that type of thing, or it's more aesthetic.

Mrs. Teather also noted that there had been times when the class was restricted from using the outdoor space in the winter months. She explained:

> We haven't spent as much time in that physical space, we've spent time outside in the winter as the weather has warranted and as we've been able to, but not as much time in the actual outdoor classroom space because it's a little bit further from our school and we have to like walk there through the snow so it's a little bit difficult to get there and sometimes they're more interested in sliding down the hill [which is closer to the school].

Mrs. Gall described the winter weather as a limitation to the use of the outdoor classroom stating:

> When we were outside there were so many wonderings and questions but then when winter came and we had two weeks where we were stuck inside and we felt like we had

to provoke the children more to engage in inquiries whereas when we were outside they would always, it would just come more naturally.

Borders of the learning space

Besides the weather being a complication to outdoor learning, the participants that I interviewed also discussed the size of the outdoor classroom as limiting. In my interviews with the kindergarteners, two students specifically expressed that the space wasn't big enough. The size of the space came up in my interview with Shane when I asked him if there was anything else he wanted to have in the outdoor classroom:

Me: Is there anything that you want to have in your outdoor classroom that you don't have?

Shane: I just wish it could be a little bit bigger.

Me: A little bit bigger? Why's that?

Shane: Um because it, it, it, like, it stops there ((points to edge of space)), so there, there there's not a big, big space and, and it just like too, like I just think I need like a bigger space because I'm working.

Me: Ok, and is there anything else that you would want to have that you don't have out here?

Shane: I just, if it could be a little, like this big ((stretches his arms out to show how big)).

When I asked Anneka how she spent her time in the outdoor classroom she explained that her classmates would use the whole field, and not just the outdoor classroom "because there's not very much room in the outdoor classroom to, to, to run around".

In addition, in my interviews with the kindergarteners, four of them demonstrated that the students weren't necessarily aware of the borders of the outdoor classroom space and that they often chose to participate in outdoor activities that were beyond the designated limits of the outdoor classroom space. Six kindergarten students discussed running and playing in the field,

two mentioned using the playground structure during outdoor class time, and three talked about playing in the sandbox. None of these three elements of the school yard were technically designated as being a part of the outdoor classroom.

All three teachers discussed the borders of the outdoor classroom either directly or indirectly. Mrs. Corey explicitly brought up the boundaries of the space and compared learning in the outdoor classroom to learning in the rest of the school yard. Mrs. Corey recounted:

> I see a lot of positive things for them. Like I see that it, first of all gives them just a more defined space again to play in, with like the trails…it kind of defines some space and also just gives them, I don't know there's a coziness about it kind of when they're there. So if they're kind of like running around playing like a big game that's kind of loud and boisterous, I find once the students they kind of enter into the boundaries of the outdoor classroom there's just a different level of noise that occurs so it naturally gets quieter and almost just a level of respect that they have for, kind of takes over a natural level of respect takes over for the space. Like they're just a little more careful of where they step and again the cedar chips, like the paths through, I think have helped to define that.

Similarly, Mrs. Teather made a comparison between the students' engagement with the outdoor classroom and the students' engagement with the play structure in the school yard. She explained:

> We usually go to the outdoor classroom in the morning and then sometimes we go to the playground in the afternoon and we find after they come in from the outdoor classroom we're at a more calm state, um even though some of us have been running around. Whereas when we come in from the playground we're all heightened a bit. Um, so it's just a different play in that nature space than it is on the plastic playground.

The teachers compared outdoor learning both inside and outside the designated outdoor classroom boundaries and discussed the benefits of the outdoor classroom space; however, as previously mentioned, both the teachers and the kindergarten students also discussed occasionally using other areas of the school yard during the outdoor learning time. This blurring of the boundaries of the outdoor learning space was addressed during my interview with Mrs. Teather when she explained:

> We have a sand pit that's near our outdoor classroom, it's not really part of it but um, because it's so close we have lots of students who migrate there as well, so we have them um digging or making sand castles or trenches.

Resources and supplies

Another limit to the space that was mentioned by both the kindergarten students that I interviewed as well as the teachers was the lack of resources and supplies available in the space. When I asked the kindergarteners about the differences between learning outdoors and learning indoors four of them mentioned that there were more toys and activities inside. Chelsea said, "We do have lots of toys in, in the indoor classroom and we don't have any um, um out here." In addition, three kindergarteners told me about physical elements of the space that they would like to develop either by building structures or adding additional resources. When I asked Becky if she thought anything was missing from the outdoor classroom she said that she would like to have a playground right beside the outdoor classroom, stating, "there's a playground over there but I want another one over here," and when I asked Chelsea if she wanted anything else in the outdoor classroom space she said, "Um we want some raspberries too." Brandon told me that he wanted to build a treehouse and to get a telescope to look at the trees.

As Anneka described the differences between learning in the outdoor classroom and learning indoors, she explained that there were more toys inside:

Anneka: In the indoor classroom there's a carpet and in the outdoor classroom there's not a carpet.

Me: There's no carpet? So what's there instead?

Anneka: Um, a, a, a, sandbox.

Me: Yah, a sandbox.

Anneka: And there's more toys and there's no blocks out here and there's more toys inside than out here.

Me: There's more toys inside? Yah. What kinds of toys do you have inside, or what kinds of things do you do inside that you don't do out here?

Anneka: Um we play in the blocks, we eat our snacks, we go to the library, and, and we watch the science experiments, a science fair, and we've gone on some field trips on a bus, we do math.

This feeling of having more toys inside was echoed by Robert. When I asked him how he felt when he was in the outdoor classroom he told me that he didn't like it very much, stating, "I kinda feel like I wanna go inside." When I asked him why he felt that way he explained, "because I don't really like playing outside. Because we, um, don't get to do as much stuff outside as we get to do inside."

All three teachers discussed the physical elements of the outdoor classroom as helping to facilitate learning for the kindergarten students. Mrs. Teather said, "We have some paths that we created just this past fall so they're just using their bodies and they're running through you know the different paths and around the rocks and they're balancing on the rocks." Mrs. Gall talked about the benefits of the amount of space available in the outdoor classroom. She commented:

> The outdoor classroom offered us like a big space for them to do that [play imaginary games], not everyone, like on the playground everyone wants to go on the slide or everyone wants to go on the monkey bars and they're fighting for space. But in the outdoor classroom there's so many different areas, they can go wherever so they have the space do to those games.

Despite benefits to the informal structure of the outdoor classroom space, the teachers also bought up their hopes to further develop their resources for the outdoor classroom. Mrs. Teather stated:

> We were also hoping to get some sort of art easel or somewhere where we can bring some art supplies out, um which we have done in the past but just somewhere where it will be a little more easy for them to either do some painting or some drawing of the nature and stuff they're exploring outside.

When I asked Mrs. Teather if she thought this would change the way the students learn in the space she explained that "It might be more intentional or thoughtful for them [the kindergarteners] just because it, you know we might draw as they're learning outside, then we'll be able to have them record their learning…in an art environment." She went on to say that:

> As the plants mature and the trees mature and stuff that the space will become more defined which I think will help the students um to be able to see those spots, that if they need some quiet time they'll be able to see those spots more defined.

Mrs. Corey said that she would:

> Like to see some type of play, like a fallen tree or a, some type of play structure that they [the kindergarteners] could do a bit more kind of health and phys. ed. type stuff on. Like a natural playground kind of.

She expressed:

> I'm just most excited to see kind of what comes up this spring because all of the planting that they've done, I'm excited to kind of see it alive because I haven't really, they did most of the planting and things in the fall so I just kind of want to see it in full bloom and see how the kids react to that.

Similarly, Mrs. Gall said that as the space develops and changes, "there will be more things to notice, more places for bugs to hide and more places for them to find bugs." She later mentioned, "we just planted all those garden beds so I'm curious to see, and hopefully it will come from them, the plants, as they come out what we're going to do."

Mrs. Corey talked about these changes and developments as being beneficial to the kindergarteners' outdoor learning experiences and discussed the use of the space as being more intentional stating:

> Instead of staying inside and setting up, you know a provocation or something in here, science based or whatever it is, I can just have more of an intentional use of the classroom instead of it just being this kind of free play inquiry space for them.

Similarly, Mrs. Teather stated, "I don't think it's going to make it less, more structured necessarily, but just giving them more opportunities to show their learning, um, outside."

Teachers' roles

As previously mentioned, the findings of this study indicate that the outdoor classroom provided a space for spontaneous and independent inquiry, thus promoting student-led learning. Both the kindergarteners and their teachers discussed the ways that the students were able to guide their own learning in the outdoor space. Two of the three teachers specifically discussed the lack of direct instruction in the outdoor classroom, but all three teachers as well as three

kindergarteners also referred to the teachers as having an important role in the outdoor classroom space.

Three of the twelve kindergarten students that I interviewed described teacher-led class meetings at the rocks as the only way that they had experienced learning in the outdoor classroom. Additionally, six students made comments about their teachers having active roles in their outdoor learning experiences. For example, as Chelsea showed me around the outdoor classroom, she explained, "Well some of the arches, well some of the arches get broken and we get the teacher for her to see, and um just, and if, um if it's crooked she just tries to um, put it back up." I later asked Chelsea what might change about the outdoor classroom in the spring and she told me:

> Um, well we have a special friend, and um she decides what, if, she decided that we planted the arches and the peppers so she's the, in the summer she's usually um, she usually tells us if we can plant some stuff or if we don't plant stuff.

The special friend that Chelsea referred to was a volunteer from outside of the school who was highly involved in the initial construction of the outdoor classroom space. At the time of this interview the role of this volunteer in the outdoor classroom had ended, however Chelsea remembered taking instructions from her and expected to work with her again come spring.

Rose referred to the same volunteer when I asked her if she would be doing any spring maintenance, explaining, "I think Brock University will." Becky also highlighted the roles played by the teachers in the outdoor classroom when she explained that some of the teachers were concerned about the students' safety on the rocks. Additionally, when I asked Becky if the students would do any more planting in the spring she further emphasized the importance of the roles of the teachers in the outdoor classroom when she replied, "Yah probably, but I don't know

yet." In these instances, the students depicted the significance of the teachers' roles in guiding the experiences of the kindergarten students in the outdoor learning space.

The roles of the teachers were also brought up in my interviews with all three kindergarten teachers. Although throughout the duration of the interviews all three teachers discussed the ways that they supported the autonomy of the students in the outdoor classroom by allowing them a space to have their own discoveries, the teachers also talked about their roles in prompting students' inquires. Mrs. Corey explained how she perceived her role in the outdoor classroom, explaining that they had "never done direct instruction." She acknowledged:

> I try and kind of stand back and just see what's happening out there, which I try to do that in the classroom as well but I think, I just feel like because of the environment of the outdoor classroom it's a lot easier to do that out there.

She followed up saying, "I definitely feel more just like kind of a facilitator there, or a supervisor."

Mrs. Teather commented that the teachers "try to just ask questions to continue to, for them [the kindergarteners] to continue to ask more questions as well and to further those conversations." Mrs. Gall agreed, stating:

> I try and kind of pop in to see what the kids are doing and just kind of listen and observe um and if I can kind of add something to the conversation or even just ask a little question just to kind of see where it goes.

Mrs. Teather also mentioned playing a part in guiding the students' learning through the development of the outdoor classroom space, when she stated, "we have some beds and some trees and just make sure that they're maturing and we're still creating that space that's for the students."

When discussing further development of the outdoor space Mrs. Corey described her role as becoming more intentional stating:

> Once I see what's out there I can be a bit more intentional with the use of the classroom. Intentionally say today we are going to look at, you know this garden bed and specifically look at these plants and what do we notice. I'll just be a bit more intentional with my questioning and where I'm leading them.

Additionally, Mrs. Corey noted that "They're [the kindergarteners] still at an age where sometimes they need a teacher to intervene and kind of help them to negotiate those [social] things, right, if they've attempted on their own." This idea of prompting the students or encouraging their inquiries came up throughout all three interviews with the teachers, demonstrating the vital role that the teachers continued to play in the outdoor inquiry-based classroom.

While students had the chance to practice their agency and autonomy in the outdoor classroom, allowing them to develop an understanding of themselves and of their own personal likes and dislikes, it is evident through the interviews with the participants in this study that the learning that the outdoor classroom has been influenced and shaped by cultural and material aspects of the learning environment. For example, not all of the kindergarteners enjoyed being outside during their designated outdoor classroom time, which was attributed to factors such as the limited space and supplies in the outdoor classroom as well as the cold weather.

In outdoor learning spaces, despite the best efforts of teachers, students do not necessarily have full autonomy to partake in decisions regarding things such as the design of learning spaces, or the amount of time that is spent in the space. Additionally, the inquiries of students are prompted by the students' physical surroundings; therefore, while the learning is student-led, it is

also highly influenced by the learning setting. The following Discussion chapter will further analyse these findings in reference to contemporary literature relevant to outdoor inquiry-based learning. Additionally, with a recognition that the current study does not aim to generalize conclusions beyond the population at hand, as per the phenomenological research methodology (Akerlind, 2012), the following discussion will raise queries for future research regarding students' experiences within the field of outdoor learning.

Chapter 4

Discussion

In this chapter I will present a discussion of the study findings. This discussion will integrate observations from this study with the previous review of relevant literature, adding to a growing body of knowledge surrounding the topic of outdoor inquiry-based learning. This discussion will be based on the study purpose, which was to explore kindergarteners' experiences in an outdoor inquiry-based classroom. Given the inductive nature of the phenomenographic research methodology (Akerlind, 2012; Patton, 1990) used in this study, I will address the kindergarteners' experiences by investigating the key themes that emerged throughout the reports of the kindergarten students and their teachers in this discussion and as outlined in the Findings chapter. In addition, in this chapter I will address the scholarly significance of this study, as well as present the study limitations and suggest directions for future research on the topic. This chapter will include sections on: a) unintentional learning in informal spaces; b) connecting outdoor and indoor learning; c) social and cultural context of students' learning experiences; and d) limitations and future research.

Unintentional Learning in Informal Spaces

The use of the outdoor classroom for experiential education was exemplified in the findings of this study in the way that the space reportedly acted as a site for hands-on, student-led learning. Resonant with the theoretical foundations of experiential education, which describe learning as an interactive process in which a learner constructs new meaning through interactions with her or his environment (Itin, 1999), this study attributes many of the benefits of the outdoor classroom to the lack of formal structure and adult control over the space. The kindergarten students in this study reported spending their outdoor time playing and interacting with their

friends, and the kindergarten teachers described observing the students as they engaged in various activities in the outdoor classroom depending on their interests.

This study indicates that the lack of formal structure and dictation in the space has allowed the students the opportunity to be active in guiding their own learning experiences. Informal spaces are typical sites for inquiry-based learning, which is described as a student-centered approach involving questioning, gathering information, and discussing and reflecting on ideas to generate new knowledge (Savery, 2006). This description of learning is resonant with the findings in this study, which refer to the lack of direct instruction from the teachers to the students in the outdoor classroom. In my interviews, all three teachers affirmed that they had not been giving the students direct instructions regarding how to spend their time in the outdoor space. This assertion was demonstrated in the study findings through a quotation from Mrs. Corey in which she described her role as a facilitator rather than an instructor in the outdoor classroom.

In this study, student-led learning was exemplified in the way that the students were exploring their own inquiries, pursuing imagination and play, and engaging in social interactions with one another in the outdoor space. In this way, the outdoor classroom had empowered the students to decide what learning was most important to them, which Novak (2010) notes is a central aspect of creating meaningful learning experiences. The autonomy of the students to make decisions about how their time has been spent in the outdoor classroom was evident in my interview with one kindergartener, Robert who exclaimed, “We can play whatever we want,” when I asked him how he spent his time in the outdoor classroom. The way that the students have guided their own experiences in the outdoor classroom in this study thus signifies a decentralization of authority in the learning space wherein the students are empowered to be a

part of a more democratic learning process (Galt et al., 2013). As noted by Novak (2010), learning that is contextualized and based on one's interests can be personal and therefore more meaningful as it allows the learner to choose "to relate new information to ideas the learner already knows" (p. 23).

Contextualized knowledge created in informal learning spaces is "constructed from a union of our actions, feelings, and thought" which gives us "a sense of ownership and control" over that knowledge (Novak, 2010, p. 23). Having a chance to self-direct their time in the outdoor classroom, the kindergarteners in this study have been a part of the process of the democratization of education (Roberts, 2009). Mrs. Teather highlighted this democratization within the space stating, "The kids are using it [the outdoor classroom] how they want to, we're not structuring it. They'll all have an opportunity to do all of those different things outside, but some of them are more drawn to different aspects of our classroom." This process empowers students to pursue their own inquiries through different learning styles in a way that "creates a better self-understanding…of motivations and values" (Galt et al., 2013, p.131).

Additionally, as demonstrated by the study findings, the informal structure of the outdoor classroom has provided a stimulating learning space for the kindergarteners to engage in hands-on learning. The way the outdoor classroom has been encouraging of students' engagement in their own learning through their interactions with the elements of the space was evident during my interviews with the kindergarteners. For example, while students guided me on tours of the outdoor classroom I observed them climbing on the rocks, picking up sticks, digging in the sand and snow, scratching the ice, jumping in the snow, and pointing things out like bugs, trees, and ant hills. In addition, all of the kindergarteners discussed various elements of the outdoors during our interviews.

These findings are consistent with research on outdoor learning spaces, which concludes that the unexpected changes in the outdoor classroom provide a dynamic learning environment (Dyment, 2005; Olsen, 2013). The changing nature of the outdoor classroom was highlighted in my interview with Mrs. Gall who expressed that students had been indirectly attuned to these changes even as they played their games in the space. As she explained, "some of the plants started dying, so they were noticing those things. So they were still playing their games but as the seasons change they notice different things and we talk about it and they come up with theories and we record observations."

The findings of this study illustrate the way that the elements and phenomena in the outdoor classroom that are connected to nature, including the growth of the plants and other seasonal changes, have provoked the curiosity of the kindergarten students. Here I turn to Dyment (2005), who emphasizes the impact of learning in an outdoor environment by stating:

> When the context for learning changes from an indoor, book-centred environment to an outdoors and nature-centred environment, students find it to be a more meaningful context for education. Learning easily comes alive, as students are able to handle, touch, smell, and even taste the materials they are learning with and from. Outdoor learning on green school grounds can help to motivate and inspire students who do not learn best in classroom (p. 30).

While the students in this study have been learning through their interests and through their engagement with their surroundings, the findings also indicate that students have been learning from one another. As noted by Roberts (2009), "it is the degree to which experience is *shared* and acted upon collaboratively that makes it, in the end, educative" (p. 54). In this study, the kindergarten students have been engaging in social learning through their interactions with each

other in accordance with their own interests and desires, whether it be walking and talking with one another, or participating in various forms of play. This social learning was demonstrated by one kindergartener, Becky, when she told me that she liked to play with two of her friends, and that some classmates preferred to spend their outdoor time alone. Similarly, when I asked Emmett what he thought his class might do in the outdoor classroom in the coming spring he replied "Uh, we will be playing and building together and stuff."

The findings of this study indicate the way the kindergarten students have participated in social learning processes in the outdoor classroom. For example, one kindergartener, Rose, told me about a game that she and her friends played where one student would act out animal characteristics and the others would guess what animal it was. When I asked her if she had learned anything in the outdoor classroom she stated, "We learn animals because we show animals." This social process, Gordon (2009) notes, is a significant aspect of student-led learning in that "in these classrooms, students learn through a combination of individual reflection and various interactions between the teacher and the students and among the students themselves" (p. 48). Group learning among the students and the role of the teachers as facilitators was exemplified by Mrs. Gall who explained that "if a lot of people [kindergarteners] have the same wondering [inquiry] um then they might, then we would bring it up in a meeting and sometimes more kids would dive deeper into what's happening." The teachers' roles in the outdoor classroom will be further discussed in the section on social and cultural context of students' learning experiences.

Furthermore, the findings of this study indicate that in bringing the three classes together outdoors, the outdoor classroom has given the students an opportunity to interact with new friends and thus to gain new differing opinions, perspectives, and learning experiences, as

described by Mrs. Corey who talked about the way the indoor classroom was limiting for the students' social interactions. Galt et al. (2013) contend that "better learning results from interactive social settings where learners of varying developmental levels work and play together. These settings are crucial because they allow for experiencing and deliberating upon varying perspectives emerging from open discussion" (p. 131). In this study, the kindergarteners referenced moments when they had worked with students from other classes to construct and maintain the space. Additionally, Mrs. Gall noted an inquiry that had been sparked by the older students, leading the kindergarteners to go looking for a snake in the schoolyard, demonstrating that the space allowed for interactions between students of varying ages and backgrounds.

Finally, it is important to note that since the kindergarteners in this study were learning indirectly through their own pursuits, there is significant indication in this study that the kindergarteners did not necessarily recognize their experiences in the outdoor classroom as being learning experiences. For example, while many of the activities pursued by the kindergarteners in the outdoor space contributed valuable opportunities for inquiry and learning, the kindergarteners mostly referred to the way they spent their time as consisting of "play." The kindergarteners in this study often did not recognize their outdoor activities as constituting learning experiences, except when the activities involved direct instruction from a teacher, such as when learning the rules of the space, and during group meetings with the class, such as the meetings "at the rocks" that were described by the kindergarteners.

The students understood learning as being the act of receiving instruction or direction regarding a specific lesson from a teacher (Alvestad 2011; Dewey, 1938). Alvestad (2011) notes that while children may recognize their learning across a wide variety of settings, "concepts connected to school seem salient in this regard" (p. 297). This is a fundamental aspect of the

work of Dewey who highlights the way that students learn information that is not being taught to them directly when he states, “perhaps the greatest of all educational fallacies is the notion that a person learns only the particular thing he is studying at the time” (p. 48). As presented in the study findings, much of the learning was indirect and informal as it emerged through students’ engagement with inquiry, social interaction, and play. This notion of indirect learning is further emphasized by Alvestad (2011) who describes kindergarteners as learning in a variety of informal contexts, including outside of the school setting.

The outdoor classroom, as a space in which the students have largely guided their own experiences, contributes to the goals of experiential education and specifically of inquiry-based learning programs; however, it is important now to refer back to the components of the experiential learning cycle. Experiential learning is said to consist of four segments: "(a) active student involvement in a meaningful and challenging experience, (b) reflection upon the experience individually and in a group, (c) the development of new knowledge about the world, and (d) application of this knowledge to a new situation" (Kolb, 1984, p.36-37). It is widely noted that experiential education involves not only observation and hands-on experience, but that meaningful learning also requires thoughtful dialogue and purposeful reflection about one’s experiences (Breunig, 2005; Fenwick, 2001; Gordon, 2009; Itin, 1999; Roberts, 2009). The kindergarten students in this study, like others who are raised in traditional, formalized learning environments, generally didn’t recognize their informal experiences in the outdoor classroom as constituting learning experiences. Future research should therefore investigate how one’s awareness of their learning in an inquiry-based setting influences the way that learning is reflected upon and transformed into meaningful experiences.

Connecting Outdoor and Indoor Learning

As alluded to in the previous section on awareness and intentionality of learning, this study supports previous findings that experiential learning in informal settings can promote the goals of formalized public education through the connection to curriculum goals (Blair, 2009; Ghent, Trauth-Nare, Dell, & Haines, 2014; Samborski, 2010) as well as through both personal and interpersonal development (Blair, 2009; Dyment 2005; Jacobi-Vessels, 2013; Kiewra, Reeble, & Rosenow, 2011; Samborski, 2010). This study also supports previous findings that outdoor learning can promote a students' connection to the outdoors (Chawla, 2009; Gill, 2014; Skelly & Bradley, 2007; Williams & Dixon, 2013). Finally, the study findings indicate that the kindergarten students have learned rules in the outdoor classroom space, signifying that despite being less structured, there have still been aspects of formalized education entrenched in the kindergarteners' outdoor learning experiences. The students' experiences of outdoor learning have differed from their traditional indoor learning experiences, yet much of the learning that has occurred in the outdoor classroom has in fact been connected to the indoor learning goals. These findings suggest that the outdoor classroom can be used as a supplementary space to support formalized learning initiatives.

This study supports previous research that has found that outdoor learning spaces provide students with an opportunity to develop their intrapersonal understandings (Childs, 2011; Jacobi-Vessels, 2013; Kiewra et al., 2011; Samborski, 2010). When learning in the outdoor classroom, the kindergarten students have directed their own activities in a way that supports the development of their understandings of themselves including recognizing their likes and dislikes as well as embracing their personal learning styles and practicing their autonomy. The way the students have directed their own outdoor time was demonstrated by Brandon who focused our

discussion around his favourite activity, digging in the sand box. Brandon told me that he often preferred to spend his time "a little bit alone" working in the sandbox when he was outside, and described the things that he liked to build.

In addition to deciding how the students spent their time in the outdoor classroom, the findings demonstrate that students have been able to choose who they wanted to spend their time with. While most students used the outdoor time as a social time, the space has often also been used by students pursuing more independent activities. The self-determination of students regarding who their time is spent with in the outdoor classroom demonstrates their autonomy in this learning space. Childs (2011) describes learning through personal interests as a factor in driving a motivation for learning, stating, "schools that encourage discovery and exploratory courses help students develop more positive attitudes about their education in a supportive environment" (p. 23). Childs goes on to suggest that these attitudes can lead to increased self-knowledge and self-efficacy in learning environments, traits which are referred to as core aspects of developing an intrinsic desire to learn (Novak, 2010). These findings demonstrate that students have a level of autonomy over their outdoor learning environment, consistent with Williams and Dixon (2013) who cite one of the many purposes of outdoor learning as personal and moral development including learning about self-concept, self-esteem, and motivation.

This study found that the kindergarten students have experienced intrapersonal growth through their daily interactions, but also through their ongoing participation in the development of the outdoor classroom space. One student, Becky, described being a part of the process of the construction of the outdoor classroom space when she talked about the role that she had played. The students' involvement in the construction of the space was also referred to in my conversation with Mrs. Gall when she described the way the students worked to protect the space

that they had helped to build. These reports about the students' involvement in the construction process are consistent with reports by Dyment (2005) who discusses the benefits of students' involvement in the process of creating outdoor learning spaces stating, "a democratisation process is one of the most important aspects of children's participation in school ground greening projects" (p. 31).

The way that the kindergarten students worked together in developing and protecting the outdoor classroom space as well as the way in which they collaborated in the various activities in the space indicates additional social benefits to learning in the outdoor classroom. The study demonstrates that student-guided learning in the outdoor classroom has provided an opportunity for the kindergarteners to negotiate social situations such as when determining the rules to games or when solving conflicts about sharing the space. This was displayed in my interview with Mrs. Teather when she talked about the way the students had effectively negotiated the rules to a game, or asked if they could join in a game in the outdoor space. Navigating social rules in the outdoor classroom was also described by Mrs. Corey when she explained that conflict resolution, including negotiating who uses what space, happened more fluidly outdoors than in the indoor classroom space. The reports of the participants in this study support the findings of Dyment (2005) who discusses the social and interpersonal benefits of outdoor learning spaces, as they offer safer, more inclusive, and less hostile social environments among students.

This study also found that the kindergarteners have had opportunities to work together to achieve collective goals in the outdoor classroom, such as when trying to find something that they were interested in, or when trying to fix something that was broken in the outdoor space. One instance of the kindergarteners working together to achieve a collective goal was presented in my interview with Mrs. Gall when she described the way that a group of kindergarteners

collaborated to fix one of the broken willow arches in the outdoor classroom. She explained that the kindergarteners quickly learned that they would need to cooperate in order to achieve their desired outcome, and that they were in fact successful in reaching their goal of fixing the arch.

These findings illustrate that through working together the kindergarten students have had an opportunity to develop communication skills as well as to gain an appreciation for the benefits of cooperation and collaboration. Dyment (2005) suggests that developing an enhanced sense of empathy, responsibility to others, and communication, can lead to more engaged citizenship amongst young people, encouraging students be involved in their communities and in the larger social systems that govern and impact their lives. Collaborative learning experiences are further highlighted by Roberts (2009) who describes resolving challenges in social environments as a fundamental aspect of students' moral and democratic learning, and as one of the philosophies of experiential education.

The findings of this study also indicate the connection between students and their surroundings through the way that the outdoor classroom has provided an arena for students to interact with and connect with elements of nature. The learning experienced by the kindergarteners has been enhanced by the integration of hands-on interactions with the outdoors and in some ways these interactions have resonated in a way that has encouraged care for the environment and outdoor surroundings. A level of care for the outdoor space was echoed throughout my interviews with the kindergarteners, such as in my interview with Anneka who expressed "I've learned that, how plants have to be taken care of…we water them, and we, and we don't pick things off of the arches, we don't pick branches off of the arches." These findings are consistent with much of the current research on outdoor education which describes outdoor learning as having an impact on students' attitudes towards their environment (Chawla, 2009;

Gill, 2014; Skelly & Bradley, 2007; Williams & Dixon, 2013), as well as their sense of environmental responsibility (Chawla, 2009; Skelly & Bradley, 2007).

The kindergarten participants in this study were consistently interacting with elements of the outdoors while in the outdoor classroom and, as demonstrated in the study findings, many of the teachers indicated that they observed the students gaining an appreciation for their surroundings through these interactions in the outdoor space. The teachers discussed the way the students had been learning to care for and protect the elements of the outdoor space, for instance Mrs. Corey mentioned that "an appreciation for nature and plants and things that are growing has kind of developed just naturally…they're just a little more careful of where they step." It is important to note here that, while caring for the outdoor classroom was a prominent theme in this study, this theme was contradicted in my interview with Martin and Kenny when they described wanting to destroy the ant hills that they had found. This finding demonstrates that while Martin and Kenny may have interacted with the ants in a way that demonstrates interpersonal learning and connections to the curriculum, in this instance, they did not exemplify their care for the ants.

In addition to learning about the outdoors, the findings in this study indicate that the kindergarten participants had been experiencing learning that was relevant to several areas of the DSBN kindergarten curriculum. This is consistent with research that finds that outdoor learning has a positive impact on students' acquisition of the curriculum goals relating to various subjects including science, language arts, math, visual arts, dramatic arts, and social studies (Blair, 2009; Ghent et al., 2014; Williams & Dixon, 2013).

The data in this study supports much of the previous research, which attributes this learning to the students' hands-on interactions with their learning environments (Blair, 2009; Jacobi-Vessels, 2013; Roberts, 2009). In this study, the students and teachers had brought

learning materials and supplies, such as writing materials and clipboards, from indoors to their outdoor classroom space. In addition, the study participants referred to learning from their outdoor classroom when they were indoors, and were finding ways to use the two spaces to best achieve their curriculum learning goals. Mrs. Teather underscored the way the outdoor classroom facilitates this connection between indoor and outdoor learning when she expressed that bringing inquiries inside from the school yard was much more common at Glynn A. Green School than it was at her old school that did not have an outdoor classroom.

Consistent with experiential education literature (Galt et al., 2013, Roberts, 2009; Michalopoulou, 2014; Williams & Dixon, 2013), much of the learning occurring in the outdoor classroom in this study was attributed to the student-led nature of the outdoor setting. The informal structure of the outdoor learning space has allowed students to interact with their environment experiencing hands-on learning in a way that has been dictated and guided by their interests. Scribner and Cole (1973) discuss this type of informal learning in schools as having more relevance to students' direct lives than traditional formalized education. The authors contrast the use of abstract, rote memorization of formal learning settings with the more contextualized learning of informal settings, pointing out that "in informal learning, numbers are used to count things and are learned in connection with the particular things counted" (p. 557). This was echoed in the findings of this study when Mrs. Gall compared learning through observations and interactions within the outdoor environment to learning in stagnant indoor settings. The findings of this study indicate that in the outdoor classroom, students have been encouraged to connect to formal learning goals and curriculum expectations. For example, the kindergarteners observed and tracked the changes in leaves on the trees in order to learn about

the seasons, and gathered collections of things of interest to them, such as rocks or bugs, in order to observe, sort, count, and describe their characteristic.

While this study found differences between learning in indoor and outdoor spaces, it is important to note that the data also indicate that much of the learning occurring outdoors has been highly relevant to the learning that the students have experienced in their traditional indoor classroom. This research thus expands on the current literature discussing the benefits of outdoor experiential education, to demonstrate the outdoor classroom as providing a space to supplement and support the learning occurring in the indoor classroom (Jacobi-Vessels, 2013). In this study, the outdoor classroom was often displayed as a space that overlapped with the initiatives of the indoor classroom, such as in the way that the outdoor classroom provided an arena for pursuing curriculum initiatives.

In addition, the findings of this study suggest that the kindergarteners and their teachers have often connected the outdoor and indoor learning spaces both by bringing resources, such as clipboards and art supplies out from inside, as well as by bringing their outdoor inquiries back inside, either literally (i.e. when Robert mentioned putting bugs in a container with holes and bringing it inside) or in following up on their outdoor observations by researching their findings in books. Rather than acting as separate learning sites, it is evident from this study that outdoor learning can be used in a way that is complimentary to the more traditional learning that occurs in indoor spaces. The way that the outdoor classroom has provided a supplementary space to the lessons occurring in the indoor classroom in this study is resonant with findings that similarly suggest that learning can be optimized by bringing the indoors out and the outdoors in (Jacobi-Vessels, 2013). From this discussion, it is evident that the kindergarteners in this study have experienced lessons in the outdoor classroom that were consistent with the learning that occurred

in their more traditional learning environments, and therefore the outdoor space can be used in a way that is supplementary to traditional indoor learning spaces.

Social and Cultural Context of Students' Learning Experiences

While there are many benefits to outdoor inquiry-based learning as reported in this study, the findings also present restrictions to the way that inquiry-based learning has been experienced by the kindergarteners in the outdoor classroom space. It is evident through this study that while the outdoor learning occurring for the kindergarten participants has typically been student-centered, the experiences that the kindergarteners have had in the outdoor classroom have inevitably been shaped by the social and cultural context of their learning. Rose and Paisley (2012) argue that in any learning space, including spaces of experiential education, the process of learning is contrived based on "intentionality toward a certain end" (p. 143), and similarly, Alvestad (2011) discusses students as "part of learning cultures" (p. 293). In this way, a student's learning experiences are fundamentally moulded in relation to the larger social and cultural context in which they are occurring.

Despite the student-centered approach of outdoor, inquiry-based education, the findings of this study indicate that the goals of the outdoor classroom have largely been influenced by the curriculum expectations as well as by the teachers and the physical structure of the space. As noted by Itin (1999) "the [learning] environment would include not only the setting (the context in which teaching takes place), but also the larger socio-political-economic systems, the multiple students in the class, and any other system which impacts the teaching-learning process" (p. 95). This section will address the ways in which the kindergarteners' experiences have integrally been shaped by their context, including an analysis of the roles played by the kindergarten teachers and the structure of the space. In addition, this section will raise further questions that

should be addressed regarding outdoor, experiential education and its connection to social justice learning.

The key role played by the teachers on a daily basis in the outdoor classroom is evident in the study findings, for example, when Mrs. Corey discussed the need for occasional teacher intervention in the kindergarteners' inquiries. This signifies that while the experiences of the kindergarten students in the outdoor classroom have typically been informal and student-led, the kindergarten teachers have remained an active part of the educational process occurring in the space. The roles of the teachers in the outdoor classroom were exemplified by each three of the teacher participants who described their role in the space as being that of a facilitator of the students' learning. For example, when Mrs. Gall described her role in the outdoor classroom she stated:

> I try and kind of pop in to see what the kids are doing and just kind of listen and observe, um and if I can kind of add something to the conversation or even just ask a little question just to kind of see where it goes.

Here, the role of the teachers as facilitators in the outdoor classroom is typical of most models of experiential education, which take a student-centred approach to learning, in which the teachers are not seen as instructors but as provocateurs involved in the co-creation of meaning with their students (Breunig, 2005; Itin, 1999; Roberts, 2009). A teacher's intervention in this way impacts the meaningfulness of the students' learning by encouraging a students' thoughtful and purposeful reflection on the significance of his or her experiences.

This crucial role of the teachers in the outdoor classroom is typical of inquiry-based learning, which "necessarily involves the use of a teacher (instructor, facilitator, or similar leadership position) regardless of calls for decreasing or eliminating the distance between these

two entities" (Rose & Paisley, 2012, p. 143). In this way, the teachers in this study have maintained a vital role in the outdoor classroom and they therefore have had a direct impact on the way that the students have interacted with and comprehended their learning. While teachers' influences can be mitigated in part by the use of student-centered learning techniques, "the teacher is part of the experiential education process, and that teacher necessarily brings along her or his own values and experiences" (Rose & Paisley, 2012, p.143). Goulart and Roth (2006) echo this expressing that "even the most ardent constructivist educators prescribe the tasks and materials" (p. 681).

While the teachers in this study described themselves as facilitators or guides in the outdoor classroom, the students often experienced learning that had been informed by the teachers' instructions. For instance, the study found that a large part of the students' perceptions of their learning in the outdoor classroom involved their experiences of learning the classroom rules, as dictated by the teachers and the larger social context in which they are learning. The way the kindergarteners focused on learning the rules of the outdoor classroom reiterates the way that learning is recognized and understood by students as previously discussed. Here, the students conceptualized learning as instructions given to them from a teacher, dismissing the value of the students' observations and experiences of the outdoors.

This emphasis on learning rules was demonstrated in the study findings through a quote from Becky, where she described having learned not to touch the arches for safety reasons. Furthermore, in the outdoor classroom, the kindergarten students learn to integrate rules that they have been taught in other learning settings, such as rules about safety and care for their surroundings. This was indicated in the finding in a quotation from Anneka where she compared the rules of the outdoor and indoor learning spaces. These experiences are consistent with the

findings of Rose and Paisley (2012) who state that "many pedagogical traditions of experiential education also confer privilege to the educator. For instance, just as class bells, assigned seats, and rows of desks are indicative of traditional education settings, experiential education often incorporates similarly universalized mechanisms of participant control" (p. 144).

In addition to teachers' vital roles as provocateurs in the outdoor classroom, it is evident in this study that adult intervention remained necessary in regards to the upkeep and the maintenance of the space. One kindergartener, Chelsea, pointed to the teachers' roles in the maintenance of the space stating, "Well some of the arches get broken and we get the teacher for her to see, and um just, and if, um if it's crooked she just tries to um, put it back up." While the kindergarteners were initially consulted in designing the outdoor classroom, as well as involved in the initial construction of the space, as reported in the study findings, the students have generally been relying on their teachers to make decisions regarding the further development of the space.

This reliance on the decisions of the teachers was depicted in my interviews with both Chelsea and Rose, when they referenced the special friend who they expect to tell them how to develop and maintain the outdoor classroom in the spring, including what to plant. This friend that they referred to was an adult volunteer from the community who was highly involved in the original design and construction of the outdoor classroom. Therefore, while the kindergarteners had been consulted about their visions of the space, decisions regarding the design and structural elements of the space were ultimately determined by the teachers and other adults. In a discussion about balancing the needs of adults with the needs of children in children-centred spaces, Wake (2008) points to a "tendency for adult agendas to dominate the design of children's gardens" (p.424) and "the prioritisation of adults' views over children's needs" (p. 425).

As presented through the study findings, the teacher participants discussed how the use of the outdoor classroom would change as the space continued to develop and grow. The findings of this study further demonstrate that while the teachers were interested in observing how the students made use of the outdoor space, they were also aware that the students' learning experiences would change with development and growth, and as the teachers found new ways to engage the students in the outdoor classroom. For example, this was expressed in the findings by Mrs. Corey when she discussed the changes in her role as a facilitator becoming more intentional once the outdoor space is more developed. This use of the outdoor classroom is resonant with a phenomenon described by Wake (2008) in which teachers' intentions "manifest as design, management, and education decisions within gardens, which in turn influence children's experiences" (p. 425).

Wake (2008) describes typical outdoor learning spaces as "designed on behalf of children" and "influenced by adult expectations and politics, which determines the expression and use of the garden" (p. 430). Mrs. Gall referred to the growth of the plants in the spring as impacting students learning when she described the garden beds that had been planted and the way they will help guide the students' learning. The pre-determined structural aspects of the outdoor classrooms thus impact the children's interactions and experiences within the space. The findings of this study indicate that the teachers see the future growth of the space as beneficial to the students' experiences. For instance, Mrs. Gall expressed that as the plants grow, "there will be more things to notice, more places for bugs to hide and more places for them to find bugs." It is hard to determine from this study, however, how the growth and development of the space will specifically impact the learning of the kindergarteners. This study raises questions regarding how the development of the structure might affect the students' learning experiences when most of

these experiences are "direct, but…highly modified by humans" and "strongly influenced by adults' interpretation of what children should experience in these places" (Wake, 2008, p. 427).

These findings indicate that in addition to teacher intervention, there were physical and structural aspects of the outdoor classroom space that impacted the students' outdoor experiences. Interesting discrepancies were presented within the study findings however, regarding the borders and other physical elements of the space. This study illustrates that as the outdoor classroom space continues to develop the boundaries of the space will become more defined and the students' use of the outdoor classroom may change, as noted by Mrs. Teather who mentioned, "as the plants mature and the trees mature and stuff that the space will become more defined which I think will help the students um to be able to see those spots, that if they need some quiet time." Here, the boundaries of the space were discussed in a positive light, as the defined learning space was noted to provide a comforting environment for students to gather. This finding is resonant with reports that describe various beneficial structural elements of outdoor learning spaces (Olsen, 2013, Wirth & Rosenow, 2012).

As well, the structural elements of the space such as the willow arches and the mulch pathways were described as aspects of the space that were appreciated by the kindergarten students in their daily interactions and especially in their imaginary play. For example, Mrs. Teather explained "We have some paths that we created just this past fall so they're just using their bodies and they're running through you know the different paths and around the rocks and they're balancing on the rocks." In this study, the space was described as less structured, yet the physical elements of the space, such as structural aspects and material supplies, were described as still providing support for the students' learning. For example, Mrs. Teather discussed adding an art easel or a place for the students to record their observations in the outdoor classroom, and

Mrs. Corey discussed her desire for a "natural" playground for students' physical use. These findings are consistent with research by Wirth and Rosenow (2012) who describe these elements stating, "learning is supported especially well when nature-based spaces provide both active and quiet experiences, as well as opportunities to engage in multisensory activities such as making music, block building, and gardening," and when "activity areas are separated from each other by colourful shrubs or flowers" (p. 44).

At the same time, the findings of this study indicate that the students had been extending beyond the designated outdoor classroom space for various reasons during their time outside. The kindergarteners that I interviewed often referenced instances when they would work outside of the designated boundaries of the outdoor classroom space during their outdoor time; for example, Anneka explained that her classmates would use the whole field, and not just the outdoor classroom "because there's not very much room in the outdoor classroom to, to, to run around." In my interviews with the student participants, the kindergarteners often questioned the boundaries of the outdoor classroom space and discussed the ways that these boundaries were stretched by those who participated in activities outside of the space, such as when running in the field and playing in the sandbox, areas of the schoolyard which were not designated as part of the outdoor classroom. This raises the question of the need for limits or borders to the designated outdoor classroom. While the study findings point to a need for a defined learning space in the schoolyard, it is also impossible to conclude how defined the learning space should be in terms of its borders, and how the boundaries of the space impact the kindergarteners' learning experiences. Further research is therefore necessary to explore the way that the students' learning will be impacted by the changes of the outdoor classroom over time.

This study therefore supports the findings of previous research that describes facilitation as an important aspect of inquiry-based learning for kindergarteners, but it is important to question the ways in which there can be too much adult or teacher intervention in experiential learning settings. Alvestad (2011) warns of the challenges of intervening in student-centered learning, and the importance of leaving room "for the children's creativity without falling into the trap of instrumentality, focusing on learning outcome and what is measurable" (p. 301). Although there is need for teacher intervention in creating meaningful learning amongst young people in experiential settings, "in moving from a loose informal, intuitive child-centered approach, the risk is in ending up with a structured, formal, scholastic, adult-oriented approach where measuring the outcome is the main issue" (Alvestad, 2011, p. 302).

Finally, it is important to note that outdoor, inquiry-based learning does not work for each kindergarten student in the same way. It was noted in the findings of this study that some students simply did not enjoy being in the outdoor classroom for various reasons. Some kindergarteners referenced their discomfort in the winter weather, as demonstrated by Brandon who said he didn't like to go outside in the winter time because it is "hard for me to dig." Others mentioned the limiting size of the space or the lack of resources and materials that were usually available to them in their indoor classroom, as demonstrated in my interview with Robert when he stated, "I don't really like playing outside…because we, um, don't get to do as much stuff outside as we get to do inside." These observations support findings by Gordon (2009) who discusses teachers' experiences of constructivist education techniques, and describes these techniques as insufficient for reaching all students equally. Gordon (2009) refers to a case in which a teacher surveyed her students to understand how they viewed her constructivist teaching techniques and was surprised to learn that:

> Some students appreciated the opportunity to work independently or in groups on solving math problems and think for themselves. Others acknowledged the chance to take responsibility for their own learning, but noted that they were often confused and did not receive adequate explanations of some concepts (p. 47).

And Gordon finally acknowledged that "there was a group of students who did not appreciate [the teacher's] constructivist approach" (p. 47). Although the students in this study possess a large degree of autonomy when in the outdoor classroom space, this level of autonomy is restricted if the students do not have an opportunity to decide whether or not they want to be outdoors in the first place.

Through this discussion it is evident that there are various connections between the outdoor learning experiences of the kindergarteners in this study and the constructivist philosophies of experiential education. This study illustrates that the kindergarten students have been practicing their autonomy by participating in student-led, hands-on learning guided by their own interests in their outdoor classroom. This has occurred as the elements of the outdoor space have sparked the inquiries of the kindergarteners as they have been participating in play and other social activities. In addition, this study indicates that the teacher participants have come to see themselves as facilitators to learning in the outdoor classroom, and that they have worked to guide the inquiries of the kindergarteners through provocation in the space. This study suggests that future research be conducted in order to further assess the impact of teachers as facilitators in outdoor inquiry-based learning spaces. Furthermore, this study indicates that the future growth and development of the outdoor classroom will impact the students' use of the space and ultimately their experiences of outdoor inquiry-based learning; however, it is unclear from this study in what ways this learning will be impacted by the structural changes of the outdoor

classroom. This study therefore points to the need for future research regarding outdoor classroom structures and the impacts of the physical elements of outdoor spaces on students' experiences of outdoor inquiry-based learning.

Limitations and Future Research

Resonant with other qualitative research methodologies, where data analysis is inferential and interpretation of the themes is somewhat subjective and is based on the research context (Akerlind, 2012), there is a need for enhanced reflection on the possible limitations of this study in order to ensure thorough and accurate representation of the research results. With the data analysis in this study being inductive and the themes emerging from the transcripts of the participants, it is important here to recognize some of the limitations of the current research study. In this study, it is important to note the limitations in regards to the subjectivities of descriptive phenomenographic research methodology, which Akerlind (2012) describes as "inevitably partial". This section will address (a) researcher reflexivity; (b) rigour (or reliability and validity); and (c) participant population.

Researcher reflexivity

As in other forms of qualitative inquiry, it is noted that phemonenographers must address their own positionality and subjectivity within any given study (Ashworth & Lucas, 2000). In qualitative research, researchers often use a process called bracketing as a practice of researcher reflexivity. Bracketing involves a researcher identifying her personal subjectivities that may inform the data analysis process in order to set aside any presupposed theories about a phemomenon and focus more directly on the experiences of the research participants (Ashworth, 1999; Ashworth & Lucas, 2000; Bednall, 2006). Similarly, phenomenographic methodologies encourage researchers to be aware of their subjectivities and presuppositions in an effort to most

accurately represent the participants' perspective of a given phenomenon (Ashworth & Lucas, 2000). That being said, phenomenographic methodology calls for researchers to maintain a critical consciousness of their own subjectivity but does not advocate the use of bracketing itself, as it is acknowledged within the phenomenographic methodological paradigm that social beings cannot remove themselves from their worldview, and that in order to control for this subjectivity, one must continuously stay self-reflective throughout the research process (Ashworth & Lucas, 2000).

Since the degree of objectivity required by bracketing is impossible to obtain in social research, phenomenographers advocate for researcher reflexivity, a process during which researchers allow their discourses, emotions, subjectivities, and identities to inform their research (Bednall, 2006; Lippke & Tanggaard, 2014). This process of reflection has been said to enhance and enrich qualitative, descriptive analyses as it allows researchers to emotionally invest and engage in their research (Ashworth & Lucas, 2000; Lippke & Tanggaard, 2014), promoting sensitivity, complexity, awareness, creativity, and overall commitment to the study and to their participants (Gemignani, 2011). Bednall (2006) argues that rather than engaging in ineffective attempts to eliminate particular personal views, researcher reflexivity recognizes the valuable impact of personal experiences on data interpretation.

Similarly, Ashworth and Lucas (2000) contend that phenomenographic research, which attempts to understand direct human experiences, must not "pretend that the attempt to enter the lifeworld of the research participant and to see, empathetically, from their point of view, is reducible to technique" (p. 307). In this way, researchers must remain reflective of their own personal subjectivities in order for the voices of the participants to emerge in any qualitative research study. With the voices of the participants being a strong focus of this study, it is

imperative that I acknowledge my own positionality as a phenomenographic researcher and as an adult conducting research with children.

As previously mentioned, my worldview stems from my background in child studies, along with an informed critical view that I hold of my experiences within the education system. Informed by my life experiences, I am inclined to hold a critical view of formal public education and of the way that public schools are engaging children in their larger social, environmental, cultural, and learning environments, particularly in the increasingly suburban regions of Southern Ontario. Additionally, as previously indicated in the introduction and in keeping with the new sociology of childhood which sees children as social actors who are capable of decision-making and common sense (Mason & Hood, 2011; Matthews, 2007), I adamantly believe that children are far too often excluded from conversations regarding issues that directly concern their lives. It is not possible to gain an understanding of what is best for children, or for anyone for that matter, without talking directly to the subjects of inquiry.

As recommended by Ashworth and Lucas (2000), throughout the process of data analysis it is important for a researcher to "consciously try to counteract the tendency to assimilate the descriptions by research participants into existing theoretical structures by looking for divergence, or emphasising differences and nuances" (Ashworth & Lucas, 2000, p. 305). By positioning my study as descriptive and open-ended, the design of the study allowed for the findings to be informed through the direct excerpts from my interviews with the participants. For example, it became increasingly evident as I collected data that there were limitations and challenges to using the outdoor classroom that I did not foresee in advance. These emerging realizations of the phenomenon are substantial in the study findings, and vastly inform the Discussion chapter. While the findings of this study will be presented through the participants'

voices, it is important to mention that as with any qualitative research with children, there are limitations to the reporting of the data. Given the differing ideas, understandings and social worlds of children and adults, it is difficult for a researcher to make sense of a child's responses in ways that articulate what the participant actually meant. This research therefore aims to engage students in a discussion about their experiences and to present this discussion, rather than to make definitive claims about the participants' responses.

Rigour (or reliability and validity)

By consciously acknowledging a researcher's subjectivities, the discussion of her personal worldview can work to enhance the rigour of a research study and can lead to improved validity and reliability of the results (Sin, 2010). It is thus necessary to address the concepts of validity and reliability when conducting any kind of human research. It is noted, however, that descriptive qualitative research, such as this study, seeks to explore the intersubjective experiences of individuals rather than to determine results that are measurably right or wrong. Therefore, the quality of a qualitative study can be better represented by a focus on its rigour rather than on its ability to follow specific validity and reliability criteria (Ackerlind, 2012; Sin, 2010).

Thus, given that this phenomenographic research explored the interpretation of individuals' perceptions, the concept of validity, the internal consistency of data (Sin, 2010), within this study related to how well I, as a researcher, addressed the human experiences of the phenomenon under investigation rather than how well the participants addressed the "reality" of the phenomenon itself. According to Fassinger and Morrow (2013), qualitative interviews should be "scrutinized for the validity of cultural concepts, [the study's] relevance to participants, [its] capacity to provide rich description and [its] appropriateness to participants' educational and

linguistic levels" (p. 80). This can be accomplished by piloting interviews and seeking feedback from insiders (Fassinger & Morrow, 2013; Sin, 2010). As previously mentioned, for this study, the kindergarteners' interview questions were piloted with three children who are kindergarten age and currently involved in group, nature-based initiatives in order to ensure the comprehensiveness of the interview script and to confirm an appropriate length for the interviews.

In recognizing the complexity of a phenomenon under investigation, phenomenography similarly presents the concept of reliability, concerned with the replicability of a research study, as focused on the soundness and credibility of the research rather than with searching for an outcome that can be replicated (Ritchie & Lewis, 2003). For the present study, in order to address the issue of reliability with such young research participants, I ensured that I was consistently reflecting the participants' answers back to them, clarifying their meanings. Furthermore, the teachers were included as participants in the study to allow for cross-checking between the reports of the kindergarteners and their teachers in order to provide context and support for the kindergarteners' data. The use of multiple sources in order to help confirm and clarify data is known as triangulation and is often used in qualitative social research, as well as in research conducted with young people (Kirk, 2007). As Patton (2002) states, "triangulation pays off not only in providing diverse ways of looking at the same phenomenon but in adding to credibility by strengthening confidence in whatever conclusions are drawn" (p. 556).

In addition, I conducted member checks by sending transcripts back to the teacher participants and to the parents of the kindergarteners for their review. Having transcripts reviewed by participants is seen as a way to enhance the validity of a phenomenographic study and to ensure that interviews are interpreted and depicted as accurately as possible (Akerlind,

2012). I did not receive feedback from any of the participants after they reviewed their transcripts indicating to me that the participants were content with how I had depicted their interviews. In accordance with phenomenographic research "best practice," the concern for validity in this study was directed at ensuring that interpretation of the data was well defended and supported, and that it is seen as useful to its audience (Lester, 1999), in this case, the educational community.

Additionally, as previously mentioned, interview questions for this study were constructed in such a way that allowed participants to expand on the discussion to include any experiences that were meaningful to them. As noted by Ashworth and Lucas (2000), this can create a sense of trust and empathy between a researcher and her participants, allowing a researcher to become more open to the lifeworld of another individual, and more accurately ensuring the validity and reliability of the research findings. In this case, having the kindergarteners guide me on a tour of their outdoor classroom allowed the participants to usher me through their regular learning environment, giving them an opportunity to direct the conversation in a way that was most meaningful to them. In entering their domain, I encouraged the kindergarten participants to inform me about the aspects of the outdoor classroom that were most pertinent to their experiences. It is important to keep in mind, that the descriptive nature of this study limits the scope of the conclusions that can be generalized beyond the population at hand (Akerlind, 2012).

Participant population

Finally, it is important to note that there were limitations to this study in regards to the participant population. This study took place in a school that was located in a predominantly white, affluent area, and therefore, this study does not address the experiences of oppressed

groups or minoritized populations in the outdoor classroom setting. It is important to note that students have varying experiences with outdoor inquiry-based learning, and that these experiences may be influenced by factors such as their race, class, gender, and physical ability. It is thus necessary to continue to investigate experiential learning as it occurs in public school settings "where homogenous groups are rare" (Warren, 2005, p.92).

Rose and Paisley (2012) contend that in experiential learning spaces "white experiences often become perceived as mainstream and pervasive" (p.141). In this way, while "experiential education practitioners are unlikely to be intentionally incorporating oppression into the design of programs…white privilege is at work even when no minoritized populations are participating" (Rose & Paisley, 2012, p.145). Rather than simply promoting the inclusion of diverse groups in outdoor experiential learning, however, Rose and Paisley (2012) attest that "we need to examine…the often unquestioned systems of privilege that support and reproduce these conditions of uneven access and underrepresentation" (p.142). It is vital to further address students' experiences of outdoor learning in public school settings where there are a diverse range of populations in order to understand how this classroom setting can work as a tool towards learning for social justice. Ultimately, this study illuminates further questions surrounding outdoor inquiry-based learning initiatives and their link to learning for social justice.

Through a presentation of interviews with kindergarteners in their outdoor, inquiry-based classroom, this discussion highlights the way the informal space supports and supplements indoor learning initiatives. Inquiry is sparked in the outdoor classroom, as learning is largely student-led, and occurs through play and through interactions among the kindergarteners. Being outdoors, students demonstrate that their experiences connect to curriculum goals, and provide opportunities for interpersonal and personal growth. Furthermore, this discussion demonstrates

the limited definition that the kindergarteners in this study have of learning, and points to the way that education is influenced by learning contexts. The discussion raises further questions regarding the use of outdoor, inquiry-based learning in the public education system, particularly in regards to the roles of teachers, the structure of learning spaces, and the experiences of those from diverse and marginalized populations.

Chapter 5

Conclusion

Based on a constructivist framework, which recognizes that knowledge is constructed by an individual in her or his interactions with the world (Gordon, 2009), the purpose of this study was to explore kindergarteners' experiences in an outdoor inquiry-based classroom. This study employed phenonemographic research methodology, a qualitative methodology in which the process of inquiry places an emphasis on the embodied meanings of a phenomenon that stem from individuals' lived experiences (Finlay, 2009). In phenomenographic research the primary method of data collection is semi-structured interviews and data analysis is inductive based on the themes that emerge throughout the interview transcripts (Akerlind, 2012).

The participants in this study included both kindergarteners, who were participating in outdoor inquiry-based learning at the time of the interviews, as well as their teachers. The data of the teachers was included in this research as a way to triangulate, or help confirm and clarify the data of the kindergarten participants (Kirk, 2007). In this study, the interviews with the kindergarten participants involved the students guiding me on a tour of their outdoor classroom and providing me with accounts of their experiences in the outdoor learning space. Student-guided tours of the outdoor classroom were used as a data collection method as recommended by previous research, which suggests the need to conduct research with children in familiar and comfortable spaces (Ashworth & Lucas, 2000; Kalvaitis & Monhardt, 2012). Ultimately, this study aimed to illuminate the voices of kindergarteners participating in outdoor inquiry-based learning by providing a descriptive account of their experiences as reported by the kindergarteners themselves as well as by their teachers.

Through an inductive analysis of the interviews conducted with kindergarteners and their teachers, this study adds to the growing body of literature that describes outdoor inquiry-based learning as a platform for hands-on, student-led learning experiences (Fielding, 2012; Gordon, 2009; Savery, 2006; Williams & Dixon, 2013). This study supports the notion that outdoor inquiry-based learning can be one way to engage students in their own knowledge construction. In this study, the outdoor classroom sparks the intuitive inquiries of the kindergarteners as they participate in play and other peer interactions. The students in this study also engage in activities that relate to various formalized learning initiatives of the public education system, such as interpersonal and intrapersonal learning, connecting to the outdoors, learning curriculum, and learning school rules. This study informs a growing body of research surrounding outdoor learning spaces, by suggesting that the outdoor classroom can act as a supplementary learning space to integrate various curriculum initiatives and augment and enrich the learning that occurs indoors.

In addition, while outdoor inquiry-based learning is one way to engage the kindergarteners in student-led learning initiatives, this study supports constructivist notions of education, which acknowledge the need for teacher intervention in inquiry-based learning. In this case, the role of the teachers is described as that of a provocateur in which the teachers prompt discussion around students' inquiries in order to support their engagement in the purposeful reflection of their experiences. While teacher intervention is a necessary aspect of inquiry-based learning for kindergarteners, this study also points to the way that a teacher's intervention could have an influence on a students' inquiries. For this reason, this study suggests that future research be conducted in order to gain a more in-depth understanding of how the intervention of teachers can impact the learning of kindergarteners in inquiry-based learning spaces.

Likewise, this study indicates that students' engagement with outdoor inquiry-based learning stems from their interactions with their surroundings in the outdoor classroom. The physical elements that were constructed such as the willow arches and mulch pathways were described as enriching for the students' learning experiences, and both the students and the teachers in this study discussed ways that the outdoor classroom will continue to develop and grow over time. While the structural elements of the outdoor classroom are seen as sparking the kindergarteners' inquiries, these elements also define and constrict the students' learning. For this reason, this study suggests that further research be conducted in order to gain a more in-depth understanding of the way structural and fixed material elements of outdoor spaces shape and impact the kindergarteners' inquiry-based learning experiences.

As described by many constructivist education scholars, this study upholds the notion that outdoor, experiential education integrates "values of respect, social responsibility, self-actualization, justice, and freedom for all living beings and the earth" (Warren, 2005, p. 95). In some ways, outdoor inquiry-based learning addresses the goals of social justice education through these inherent values, as demonstrated in this study by the way the kindergarteners practice decision making and autonomy in the space, as well as the way they pursue learning that is motivated by their own interests and inquiries. In this way, the experiential learning that is occurring in the outdoor classroom mirrors "the major elements of social justice education, such as balancing emotional and cognitive components, supporting personal experience, attending to social and group relations, utilizing reflection and student-centered learning, and valuing awareness, personal growth, and change" (Warren, 2005, p. 96). In addition, in this study outdoor inquiry-based learning addresses the goals of social justice education by "encouraging

students to reflect on personal experience" which "is also vital to social justice work and proves a critical methodological link to the experiential education field" (Warren, 2005, p. 95).

It is important, however, not to leave the link between experiential education and social justice unquestioned, as noted by Rose and Paisley (2012), who offer an essential reminder of the dangers of "curricula deemed to be value-neutral and free of any advantages or disadvantages based on race, gender, class, geography, culture, or otherwise" (p. 144). It is important to recall that the participants in this study attend a school that resides in a predominately white, affluent neighbourhood, and for this reason, this study does not address the experiences of oppressed groups or minoritized populations in the outdoor classroom setting.

This study points to the need for future research on outdoor inquiry-based learning in order to gain a more in depth understanding of the experiences of diverse populations in outdoor inquiry-based learning, as "the same phenomena may be perceived differently by different people and under different circumstances" (Akerlind, 2012, p. 116). In further exploring this topic it is possible to gain a more in-depth understanding of how, as noted by Breunig (2005), "engaging in a more purposeful classroom praxis that acts on the theoretical underpinnings of experiential education and critical pedagogy can be one means to working toward a vision of a more socially just world" (p. 120).

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Appendix A: Parental/third party letter of invitation (kindergarten participants)

Dear parent/guardian,

I, Kate MacDonald, Masters Student in the Department of Social Justice and Equity Studies at Brock University, invite your child to participate in a project entitled, "Back to the *Garten*: Inquiry-Based Learning in an Outdoor Kindergarten Classroom".

This project aims to explore kindergarteners' experiences in an outdoor inquiry-based classroom. It is my hope that you will agree to my interviewing your child, where we will talk about the experiences that he/she has had in the outdoor classroom at Glynn A. Green School. The discussions will take place in the outdoor classroom, in November, 2014 and will last approximately 20 minutes. During the interview, your child will be asked to guide me on a 'tour' of the outdoor classroom. The discussion will be audio taped to ensure accuracy in what is shared. A total of four participants from your child's kindergarten class will be selected to participate in this study on a first come, first serve basis.

If you agree, your child will be assigned a pseudonym in order to keep his/her identity confidential, and no other demographic information about your child will be recorded. Participation in this project is voluntary, and if there are any questions that your child does not wish to answer she/he will not be required to. Your child will have the option to stop participating in the project at any time upon request. Your child's classroom teacher may also be participating in an interview for this study, and if so, she/he will be identified by name in the reporting of results, however that will be the only identifying feature used.

In order to ensure that no students are left out of this experience, all kindergarteners will be invited to guide me on a 'tour' of the outdoor classroom regardless of their participation in this study. If your child is interested in guiding a tour but will not be participating in the study, no data will be collected during his/her tour, the tour will not be audio recorded, and your child's confidentiality will be ensured; this is simply for the purpose of maintaining inclusivity within the classroom.

Involvement in this project may be beneficial to your child as it will give him/her the opportunity to share the experiences he/she has had in the outdoor classroom, and to have his/her opinions and voice heard. Gaining an understanding of the ways outdoor learning can impact the lives of students may also benefit current and future research by providing a rationale for implementing more outdoor-based school g*reening* initiatives.

A written report, including the findings of this project will be made available to you and your child upon completion of the project if you so desire. You may indicate whether you would like to receive a copy of the report on the bottom of the attached consent form.

If your child would like to participate in this project, and tell me about his/her experiences with inquiry-based learning in an outdoor classroom, please sign the attached parental/third party consent form and return it to the school principal at Glynn A. Green School. If you have any

questions about your child's rights as a research participant, please contact the Brock University Research Ethics Officer (905 688-5550 ext 3035, reb@brocku.ca).

If you have further questions, please feel free to contact me.

Thank you for your time and consideration.

Appendix B: Letter of invitation (teacher participants)

Dear (Teacher's Name),

I, Kate MacDonald, Masters Student in the Department of Social Justice and Equity Studies at Brock University, invite you to participate in a research project entitled, "Back to the *Garten*: Inquiry-Based Learning in an Outdoor Kindergarten Classroom."

The purpose of this research project is to explore kindergarteners' experiences in an outdoor inquiry-based classroom. I wish to schedule an interview with you to discuss the experiences that your students have had in the outdoor classroom. The discussion will take place at Glynn A. Green School in November, 2014. It will occur outside of class time, and will last approximately 45 minutes. The interview will be audio taped to ensure accuracy with what you say.

I will concurrently be inviting the kindergarten students in your class to participate in interviews for this study. Four students from your class will be chosen to participate on a first come, first serve basis. These interviews will consist of the kindergarteners guiding me on a 'tour' of the outdoor classroom, and informing me of their experiences. With your permission, interviews with the kindergarteners will take place in the outdoor classroom during class time, and will last approximately 20 minutes each.

In order to maintain a level of inclusivity, all students in your class will be invited to guide me on a 'tour' regardless of their involvement in this research, however for those who are not research participants the 'tours' will not be audio taped, no data will be collected, and the kindergarteners' identities will remain confidential. These subsequent tours will last approximately 10 minutes each. Again, with your permission, this will occur during class time, and if all students choose to participate, will take approximately three and a half hours total.

Your involvement in this project can act to supplement the interviews conducted with the kindergarteners in your class, contributing to the discussion surrounding their experiences. In discussing your observations of kindergartener's experiences of inquiry-based learning in an outdoor setting, you will have the opportunity to contribute to a growing body of knowledge about schoolyard pedagogy. A written report, including the findings of this project will be made available to you upon completion of the project if you so desire, you may indicate whether you would like to receive a copy of the report on the bottom of the attached consent form.

If you agree, your identity will be disclosed in my final report through the use of your last name only. You can otherwise self-select a pseudonym you wish for me to use. I will include direct quotes from the interviews in the reporting of the results where appropriate, and will attribute the quotes to you either by name, or by pseudonym, based on your preference. Your participation is voluntary, which means that you can decide to withdraw from the study at any time without penalty. This also means that if there are any questions that you don't want to answer, you may decline.

If you would like to participate in this project, and tell me about your experiences with kindergartens using an outdoor classroom for inquiry-based learning, please sign the attached consent form and return it to the school principal at Glynn A. Green School. If you have any questions about your rights as a research participant, please contact the Brock University Research Ethics Officer (905 688-5550 ext 3035, reb@brocku.ca).

If you have other questions, please feel free to contact me.

Thank you for your time and consideration.

Appendix C: Informed parental/third party consent form (kindergarten participants)

INVITATION

Your child is being asked to be part of a project that will involve answering some questions for me about the experiences that he/she has had in the outdoor classroom at Glynn A. Green School. By studying this topic, I am hoping to explore kindergarteners' experiences in an outdoor inquiry-based classroom.

WHAT'S INVOLVED

If your child should decide to participate, he/she will be asked to take part in an interview with myself, Kate MacDonald, in order to gain an understanding of the ways students engage in the outdoor classroom. For the interview, your child will be asked to guide me on a 'tour' of the outdoor classroom, while I ask him/her open-ended questions surrounding how he/she spends his/her time in the outdoor classroom, how he/she feels when he/she is in the outdoor classroom, and what he/she may be learning from his/her outdoor classroom experiences. The discussion will last approximately 20 minutes and will take place in the outdoor classroom at Glynn A. Green School, in November, 2014. The interview will be audio recorded to ensure accuracy in my report. A total of four participants from your child's kindergarten class will be selected to participate in this study on a first come, first serve basis.

POSSIBLE BENEFITS AND RISKS

Being involved in this project may be good for your child because it will give him/her the chance to express how he/she feels about using the outdoor classroom for inquiry-based learning, allowing your child to have his/her opinions heard. Allowing young people to be a part of such a project can lead to a greater sense of individual agency. Gaining an understanding of the ways that inquiry-based learning in a schoolyard setting can impact the lives of students will add to a relevant body of research and literature and may provide a rationale for future projects. There are no known or anticipated risks associated with participation in this study.

CONFIDENTIALITY

If you agree, your child will be assigned a pseudonym in order to keep his/her identity confidential, and no other demographic information about your child will be recorded. Quotations from your child will be used in the reporting of the data where appropriate. Your child's classroom teacher may also be participating in an interview for this study, and if so, she/he will be identified by name in the reporting of results. Additionally, the name of your child's school will be disclosed in the final report. Data collected during this study will be stored on a password protected computer and audiotapes will be kept in a locked box and secured in the office of the research supervisor, Mary Breunig. Data will be kept for six months after the study's completion at which time confidential shredding of all related paperwork will take place, and audiotapes of the interviews will be erased. Access to this data will be restricted to the

principal investigator, Kate MacDonald and with her permission, Mary Breunig, Faculty Supervisor.

VOLUNTARY PARTICIPATION

Your child does not have to participate in this project; it is his/her choice entirely. If there are any questions that your child does not want to answer, he/she can say no. Also, if your child wants to stop talking to me at any time he/she can do so upon request. This will be made clear to your child throughout the duration of the interview. If you or your child do choose to withdraw his/her participation from the study, all data collected from your child will be erased and will be omitted in the reporting of the results. Your child's participation, non-participation, or withdrawal from this project will in no way affect his/her academic standing.

In order to ensure that no students are left out of this experience, all kindergarteners will be invited to guide me on a 'tour' of the outdoor classroom regardless of their participation in this study. If your child is interested in guiding a tour but will not be participating in the study, no data will be collected during his/her tour, the tour will not be audio recorded, and your child's confidentiality will be ensured; this is simply for the purpose of maintaining inclusivity within the classroom.

PUBLICATION OF RESULTS

Results of this project may be published in professional journals and presented at conferences. If requested, feedback about this project will be made available by e-mail, in the form of the final thesis project, or a short summary of the findings, available August, 2015. Please indicate whether you are interested in receiving a copy of this report once it is complete at the bottom of this form.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about his project or require further information, please contact the Principal Investigator, Kate MacDonald, or the Faculty Supervisor, Mary Breunig, using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (file #: 14-050). If you have any comments or concerns about your child's rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Thank you for helping me with this project. Please keep a copy of this form for your records.

THIRD PARTY CONSENT FORM

I, _____ (parent/guardian's name) agree to my child,

_____’s (child’s name) participation in the project described above. I have made this decision based on the information I have read in the Informed-Consent Letter. I have had the opportunity to receive any additional details I wanted about the project and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Parent/Guardian’s Name: _____

Signature: _____

Date: _____

E-mail Address: _____

(Only if you would like to receive a copy of the report once complete.)

Appendix D: Informed consent form (teacher participants)

INVITATION

The purpose of this study is to explore kindergarteners' experiences in an outdoor inquiry-based classroom. By studying this topic, I am hoping to gain insight into what is being experienced and what is being learned from outdoor, inquiry-based learning.

WHAT'S INVOLVED

For this project, you are asked to take part in an interview with myself, Kate MacDonald, in order to get a description of the ways students interact with their outdoor classroom. The interview questions will be open-ended, and will last approximately 45 minutes and will take place at Glynn A. Green School, in November, 2014. The interview will be audio recorded to ensure accuracy. I will concurrently be inviting the kindergarten students in your class to participate in interviews for this study. Four students from your class will be chosen to participate on a first come, first serve basis. These interviews will consist of the kindergarteners guiding me on a 'tour' of the outdoor classroom, and informing me of their experiences. With your permission, interviews with the kindergarteners will take place in the outdoor classroom during class time, and will last approximately 20 minutes each.

POTENTIAL BENEFITS AND RISKS

There are various possible benefits to this research for both participants and the scientific community. Teachers who participate will have an opportunity to share their experiences of working in a unique, classroom setting, providing a platform for understanding inquiry-based learning and schoolyard pedagogy. In discussing your observations of kindergarteners' experiences of inquiry-based learning in an outdoor setting, your participation can act to supplement the interviews conducted with the kindergarteners in your class, contributing to the discussion surrounding their experiences. By being involved in this study you will have the opportunity to contribute to a growing body of knowledge surrounding schoolyard pedagogy, providing rationale for future projects.

CONFIDENTIALITY

If you agree, your identity will be disclosed in my final report through the use of your last name only. If you would prefer, you have the option to self-select a pseudonym that you wish me to use. I will include direct quotes from the interviews in the reporting of results where appropriate, and will attribute the quotes to you either by name, or by pseudonym, based on your preference. Additionally, the name of the school, Glynn A. Green, will be disclosed in the final report.

Data collected during this study will be stored on a password protected computer and audiotapes will be kept in a locked box, and secured in the office of the research supervisor, Mary Breunig. Data will be kept for six months after the study's completion at which time confidential

shredding of all related paperwork will take place, and audiotapes of the interviews will be erased. Access to this data will be restricted to the primary researcher, Kate MacDonald and with my permission, Mary Breunig, Faculty Supervisor.

VOLUNTARY PARTICIPATION

Participation in this project is voluntary. If you wish, you may decline to answer any questions or participate in any component of the project. Furthermore, you may decide to withdraw from this study at any time and may do so without any penalty. If you decide to withdraw your participation from this study, all data collected from you will be erased and will be omitted from the reporting of results.

PUBLICATION OF RESULTS

Results of this project may be published in professional journals and presented at conferences. If requested, feedback about this project will be made available by e-mail, in the form of the final thesis project, or a short summary of the findings, available as of August, 2015. Please indicate whether you are interested in receiving a copy of this report once it is complete at the bottom of this form.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about his project or require further information, please contact the Principal Investigator, Kate MacDonald, or the Faculty Supervisor, Mary Breunig, using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (file #: 14-050). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Thank you for your assistance in this project. Please keep a copy of this form for your records.

CONSENT FORM

I _____ agree to participate in the project described above. I have made this decision based on the information I have read in the Informed-Consent Letter. I have had the opportunity to receive any additional details I wanted about the project and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: _____

Signature: _____

Date: _____

Please check the appropriate box to indicate whether you would like to give the researcher permission to include your last name in the reporting of results.

☐ Yes, I give the researcher permission to include my last name in the reporting of my data.

☐ No, I would like to use a pseudonym in the reporting of my data.

E-mail: _____

(Only if you would like to receive a copy of the report once complete.)

Appendix E: Interview guide (kindergarten participants)

I would like you to take me on a tour of your outdoor classroom while I ask you some questions about your experiences. We will be talking about the things you have seen and done in the outdoor classroom and what kinds of things you have learned. I want to talk about the things that are most important to you and how you feel when you are working in the outdoor classroom, so please try to tell me as much as you can.

We will talk for about 20 minutes, and our conversation will be recorded on a tape to make sure that I remember everything you say. After we talk, I am going to be writing about the things that you have told me. If it is ok with you, we will make up a fake name for you when I write about our conversation so that people do not know what you told me.

Please try to tell the truth the best you can when you answer the questions. If there are any questions that you do not want to answer just tell me and we will move to the next question. If you are confused about any of the questions, just ask me what I mean. Please remember that answering these questions is up to you, so you can choose to end our conversation at any time without anything bad happening. If you get tired during our conversation just tell me, and we will take a break.

Do you have any questions for me before we start?
Is it ok with you if I start the tape recorder and to begin asking you questions now?

(If yes, start the interview. If no, end the interview process and thank the participant for their time).

INTERVIEW GUIDE

1. What do you spend most of your time doing when you are in the outdoor classroom?

2. How do you feel when you are in the outdoor classroom?

3. Have you learned anything from being in the outdoor classroom?

4. How is learning outside different from learning inside?

6. Is there anything else that you want to say about the outdoor classroom?

7. Do you have any questions for me?

INTERVIEW DEBRIEF

Thank you for letting me talk to you for my project. I hope you enjoyed talking to me and answering my questions. Like I said earlier, the reason for my project is to try to understand what kids in kindergarten think about their experiences in an outdoor, inquiry-based classroom and to

find out about the things you have seen and done in the outdoor classroom and what kinds of things you have learned.

If you have any questions, you can talk to me any time; my contact information is in this (feedback) letter.

- Give feedback letter

Appendix F: Interview guide (teacher participants)

The questions that I am going to ask you are to try to understand more about the experiences that the kindergarten students in your class have through their engagement in outdoor, inquiry-based learning. We will be talking about the things that you have seen occurring in the outdoor classroom in order to inform a discussion about what students are learning from outdoor, inquiry-based learning. Please try to answer the questions with as much detail as possible.

Our conversation will be tape recorded to make sure that everything you say gets recorded correctly. This means that I will know your identity (who you are) so anonymity can't be promised. With your consent, this study will not be kept confidential either, which means that your last name will be used in the final report. If you would prefer that your name be kept confidential, you will get to make up a fake name and this name will be used instead of your real one for everything that gets written down.

Please try to answer questions as truthfully and accurately as possible. If there are any questions that you do not want to answer just tell me and we will move to the next question. If any of the questions are unclear, I would be glad to clarify. Please remember that answering these questions is entirely at your discretion, so you may choose to end our conversation at any time without any consequences. Please notify me if you would like to take a break at any time throughout our conversation.

Do you have any questions for me before we begin?
Do I have permission to start taping and to begin asking you questions now?

(If yes, start the interview. If no, end the interview process and thank the participant for their time).

INTERVIEW GUIDE

I would also like to mention that this is a semi-structured interview, so the questions that I ask you will be somewhat adaptable and may differ based on your responses.

Introductory Questions:

1. What do the students spend most of their time doing when they are in the outdoor classroom?

2. Do you feel that the students have learned anything from being in the outdoor classroom?

3. Does learning outside differ from learning inside? If so, how?

Transition/Key Questions:

4. Does the outdoor classroom impact students' understandings of the curriculum? If so, how?
    a. what connections are made and in what areas?

5. Does the outdoor classroom impact students' understandings of the 'big ideas' of inquiry-based learning? If so, how?

6. How does this learning relate to students' understandings of themselves?
    a. How does this learning relate to students' understandings of others?

Final Questions:

7. Is there anything else that we didn't talk about today that you would like to mention in regards to inquiry based learning in your kindergarten class or the use of the outdoor classroom?

8. Do you have any questions for me?

INTERVIEW DEBRIEF

Thank you for letting me talk to you for my project. I hope you enjoyed talking to me and answering my questions. Like I said earlier, the reason for my project is to try to understand more about the experiences that the kindergarten students in your class have through their engagement in outdoor, inquiry-based learning, in order to inform a discussion about what students are learning form outdoor, inquiry-based learning. - Confirm Pseudonym

If you have any questions, please feel free to contact me at any time using the contact information provided in this (feedback) letter. - Give feedback letter